SANTOSH DEEMED TO BE UNIVERSITY

PRATAP VIHAR, GHAZIABAD, UP

MASTER OF SCIENCE IN MEDICAL LABORATORY TECHNOLOGY

Guidelines & Syllabus

EFFECTIVE FROM AUGUST (2021)

SESSION 2021-2022

DURATION – 2 YEARS

DEPARTMENT OF PATHOLOGY

SANTOSH MEDICAL COLLEGE HOSPITALS

NO.-1, AMBEDKAR ROAD, GHAZIBAD, UP.

CONTENTS

Master in Medical Lab Technology (Pathology) M Sc. M.L.T. 1st YEAR

1. Human Anatomy & Physiology
2. Clinical Biochemistry
3. Clinical Pathology
4. Clinical Microbiology

Practical

1. Human Anatomy & Physiology 2. Clinical Biochemistry 3. Clinical Pathology 4. Clinical Microbiology

Master in Medical Lab Technology (Pathology) M Sc. M.L.T. 2ND YEAR

1. Clinical Hematology
2. Blood Transfusion & immune hematology
3. HistoPathology and histotechniques
4. cytopathology and cytotechniques

Practical

1. Blood Transfusion & Immunohematology 2.Histopathology 3. Cytopathology 4. hematology

Dissertation (Pathology) & Viva

M.Sc. (MLT) Pathology- scheme and syllabus

M Sc. M.L.T (PATHOLOGY)

PAPER:- HUMAN ANATOMY & PHYSIOLOGY

Anatomy

Syllabus:

UNIT-1 **Introduction:** Overview of the structure organization of the human body; anatomical terminology of positions & locations, planes.

Cell: Cell morphology and diversity; introduction to ultra structure and function of cell organelles.

Skeletal Muscles: Major skeletal muscles of the head, neck, thorax, abdomen and upper and lower limbs.

General Osteology: General morphology of bones; structural classification of bones, development and growth of skeletal tissue and bones.

General Astrology: Structural and functional classification of joints; general morphology of a synovial joint and associated structures; movements made available by synovial joints.

Detailed Osteology and Astrology Practical: Naming and identification of osteological features of individual human bones; Bones of Upper limbs – Clavicle, Scapula, Humerus, Radius, Ulna; Lower limbs – Femur, Hip bones, Sacrum, Tibia, Fibula, Ribs, Sternum Vertebral Column. Naming, identification and application of classification to the major joints of the human body; examples of variability in the human skeleton.

UNIT-2 **Cardiovascular System:** Macroscopic features, function and location of the adult and the location of major arteries and veins; macroscopic feathers of blood vessels including arteries, veins and capillaries; morphological features of the cellular components of blood.

Lymphatic System: Macroscopic features, major function and location of the lymphatic vascular structures, lymph nodes, tonsils and other mucosa-associated lymphatic tissue, spleen and thymus; microscopic anatomy of lymph nodes.

Nervous System: Macroscopic features and major functions of the brain brief structure, location & function of cerebrum, cerebellum & brain stem and spinal cord; morphological features and major function of the contents of the peripheral nervous system and autonomic nervous system.

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Respiratory System: Macroscopic features and major functions of the nasal cavity, paranasal sinuses, pharyns, larynx, trachea, bronchi, lungs and thoracic wall including the thoracoabdominal diaphragm.

Digestive System: Macroscopic features and major functions of the mouth, salivary glands,

pharynx, oesophagus, stomach, small and large intestines, liver pancreas, biliary system and peritoneal cavity.
UNIT-3 **Urinary System**: Macroscopic features, major functions and location of the kidneys, ureters, urinary bladder and the urethra.
Endocrine System: Macroscopic features, location and basic function of the hypothesis cerebri, thyroid gland, parathyroid glands, suprarenal glands, pineal gland and organs with a minor endocrine function.
Male Reproductive System: Macroscopic features, Major functions and location of the scrotum, testes, epididymis, ductus deferens, inguinal canal, seminal vesicles, prostate gland, bulbourethraj gland and penis.
Female Reproductive System: Macroscopic features, major functions and location of the ovaries, uterine tubes, uterus, vagina and external genitalia.
Special Senses: Macroscopic features and major functions of the contents of the orbital cavity, the eyeball, lacrimal apparatus, and ext ernal, middle and internal ear.
UNIT-4 **Upper Limb**: Relevant osteology; detailed plain radiographic anatomy of skeletally mature individuals.
Head and Neck: Relevant osteology of the skull and cervical vertebrae; surface anatomy, lymphatics major blood vessels and nerves of the head and neck; regional anatomy of the brain and its meninges.
UNIT-5 **Histology**: macroscopic and microscopic studies of epithelial tissue, general connective tissue, cartilaginous tissue, bone tissue, muscle tissue, nervous tissue and the integument; major functional advantages of each tissue type.
Anatomy Practical:
• Demonstration of bones identification and side determination upper limb-clavicle, scapula, humerus, radius, ulna, lower limb-femur, Hip bone, Tibia, Fibula, Vertebral Column, Ribs, Sternum, Sacrum
• Demonstration of heart.
• Demonstration of different parts of respiratory system and normal X-rays- lungs.
• Demonstration of the part of digestive system and normal X-rays- stomach, small intestine, large intestine, liver.
• Embalming of human cadavers for teaching purposes & social/ funeral embalming.
• Surface anatomy on cadaver.
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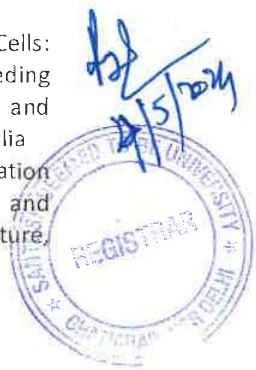
• Demonstration of major vessels of the body-Aorta, subclavian, carotid, brachial, radial, ulnar, femoral, renal.
• Demonstration of bones & joints of the limb in normal X-ray.
• Demonstration of major muscles of the body-limbs, head & neck.
• Demonstration of other organs—spleen, testis, uterus.
• Histology-General epithelium, connective tissue, gland, bone, cartilage lymphoid tissue Systemic-Lung, Esophagus, Stomach, Small Intestine, Pancreas, Liver, Kidney, Pitutary Gland, Thyroid, Testis, Ovary.

PARAMEDICAL SYLLABUS – PHYSIOLOGY (M.Sc.)
General Physiology: Cell: Structure and function of a cell, Transport across the cell membrane, Passive Transport:Diffusion (Simple and Facilitated), Osmosis (Osmotic pressure, Tonicity), Active transport: Primary (Na+K+ ATPase),Secondary, Carrier type (Uniporters, Symporters, Antiporters), Vesicular (Endocytosis and Exocytosis), Tissues:Definition and classification (Epithelial, Connective, Muscular, Nervous), Body water and body fluids: Distributionof total body water, Ionic composition of body fluids, Concept of pH and H+ concentration. The MembranePotentials: Resting membrane potentials (Genesis & function), Action Potential
Blood: Composition and functions of blood, Hemoglobin (Normal values and time), Blood Cells: RBCs, WBCs,Platelets (Development, structure and functions), Coagulation of blood and bleeding disorders, Haemophilia,Purpura, Blood groups (ABO, Rh) Uses, Lymphoid tissues (types) and immunity, Immune system (Natural andAcquired), Applied: Anaemia (Types), Jaundice, Hemophilia
Gastrointestinal Tract: Organization of structure of GIT, Functions of digestive system, Innervation of GIT (EntericNervous System). Mouth (Oral Cavity): Boundaries, Tongue, Teeth, Composition and functions of saliva,Mastication (chewing), Swallowing (Deglutition) Stages. Stomach: Structure,



Functions of stomach and innervation,Composition and functions of gastric juice, Regulation of secretion of gastric juice, Gastric motility and emptying.Pancreas: Structure, Nerve supply, , Composition, functions and regulation of secretion of pancreatic juice. Liver:Structure, Functions and Liver function tests Bile: Composition, functions and control of secretion. Gall Bladder:Functions of gall bladder. Small Intestine: Intestine juice, Digestion and movements. Large Intestine: Structure, movements, absorption and secretion, dietary fibers. Digestion and absorption in GIT: Digestion and absorption ofcarbohydrates, lipids and proteins. Food and nutrition: constituents of a normal diet, Balanced diet, Appliedaspect (Deficiency diseases, Kwashiorkar, Marasmus)

Respiratory System: Structure and functions of respiratory system, Air Passages: Nose and nasal cavity, pharynx,larynx, tracheobronchial tree, lungs, respiratory membrane, pleura, Properties of gases: Partial Pressure,composition of dry air, Functions of respiratory system: Lung defense mechanism and pulmonary circulation.Mechanics of respiration: Mechanism of breathing (Inspiration and Expiration), Alveolar Surface Tension (Actionsof surfactant), Alveolar Ventilation: Dead space (Anatomical and Physiological), Diffusion capacity of lungs (ClinicalSignificance), Lung volumes and capacities (Static: Tidal Volume, Residual Volume, Vital Capacity, Total Lungcapacity; Dynamic: FEV1, FEV2, FEV3, Minute/Pulmonary Ventilation, Maximum Voluntary Ventilation). Transport ofgases: Oxygen transport [Carriage of oxygen in blood; Dissolved form & combined with hemoglobin, Carriage ofoxygen in the body; In tissues (At rest and during exercise), In lungs]. Carbon-di-oxide transport [Carriage ofCarbon-di-oxide in blood; In dissolved form, carbamino form (In plasma and RBCs), as bicarbonate, Carriage ofCarbon-dioxide in lungs], Oxygen hemoglobin dissociation curve (Shift to right & Shift to left).Regulation ofrespiration: Nervous Regulation of respiration [Automatic control via Medullary and Pontine Respiratory centers,Voluntary control of respiration], Genesis of respiration (Inspiration and Expiration), Factors affecting respiration [Chemical and non-chemical stimuli],Chemical Regulation of respiration [Peripheral chemoreceptors (Carotidbodies and Aortic bodies) and Central (Medullary) chemoreceptors]. Physio clinical aspects: Dyspnea, Apnea,Hypoxia

Cardiovascular System: General Cardiac chambers (Valves in the heart, Heart sounds, Pacemaker tissue of theheart), Properties of Cardiac Muscle, Cardiac Cycle, Electrocardiogram (ECG), Circulation: Functions, Pressurechanges in vascular system, Organization and functions of vascular system, Distribution of major vessels in thebody, Lymphatic system, Regulation of cardiovascular system:, Local (Basic Myogenic tone), Systemic: Chemical,Neural (Autonomic and medullary; Baroreceptors and Chemoreceptors) Heart Rate: Definition, Factors affectingHR and it's control, Cardiac Output: Definition, Distribution and control, Arterial Blood Pressure: Definition, factors affecting and regulation

Excretory System: Anatomy and Physiology of Urinary System, Kidney: Structure, Organization and functions ofGlomerulus, Glomerular membrane, Blood supply Functions of kidney: Formation of urine, Regulation of waterbalance, Regulation of electrolyte balance, Regulation of acid-base balance, Endocrine functions of kidney, UrinaryPassages: Ureters, Urinary Bladder (Structure and function, Higher control of micturation)

Endocrine System: Definitions, Control (Neural and endocrine), Characteristics of hormones, Pituitary Gland:Physiological anatomy (Anterior, intermediate and posterior lobe), Anterior Pituitary – Six Hormones (GH, PRL,TSH, ACTH, LH, FSH, Growth Hormone (GH): Control and actions, Applied (Gigantism, Acromegaly, Dwarfism),Prolactin (PRL): Control and actions of PRL, Posterior Pituitary, ADH (Anti diuretic hormone): Control of ADHsecretion, Actions of ADH, Applied, Oxytocin: Actions and Control of oxytocin secretion, Intermediate lobe ofPituitary , MSH (Melanocyte stimulating hormone), Thyroid Gland: Physiological anatomy, Types of hormones (T3and T4), Regulation of thyroid secretion, Actions of thyroid hormone: Calorigenic , On carbohydrate metabolism,On lipid metabolism, On growth and development, Effect on nervous system, Applied (Goiter, Hypothyroidism,Hyperthyroidism), Parathyroid, Calcitonin and Vitamin-D: Role of calcium in metabolic processes, Distribution,Absorption and fate of calcium in the body, Hormones regulating calcium metabolism (Vitamin-D, PTH, Calcitonin),Applied (Rickets, Osteomalacia & Adult Rickets, Hyperparathyroidism), Adrenal Cortex: Physiological Anatomy of adrenal gland, Regulation of glucocorticoid secretion, Actions of glucocorticoids, Cushing's Syndrome, Mineral corticoids (Aldosterone, Actions of aldosterone, Regulation of aldosterone secretion, Addison's Disease), Sex Hormones, Adrenal Medulla: Physiological Anatomy, Actions of catecholamine's, Actions (CVS, carbohydrate metabolism, lipid metabolism, BMR, CNS, Eyes, Urinary bladder, skin), Pancreas: Physiological Anatomy, Glucagon, Insulin (Actions), Applied (Diabetes Mellitus; Causes, Signs and

• Determination of Clotting Time, Bleeding Time

PAPER:- CLINICAL BIOCHEMISTRY

Syllabus

1ST YEAR:

1) **Cell and Membrane:** Basic structure and function of the cell. Structure of the cell membrane. Functions of the cell membrane Transport through the cell membrane: active, passive, facilitated. Membrane proteins and functions.

2) **Chemistry of Carbohydrates**: definition, classification. Isomerism, optical isomerism, Structural presentation of monosaccharide's, The various chemical reactions of carbohydrates and their derivatives. Disaccharides and polysaccharides, Metabolism.

3) **Chemistry of Lipids**: definition, Classifications, properties , classifications. Fatty acids types and uses, Glycerides, Phospholipids, Glycolipids, Ecosanides, Steroids, Cholestrol, Lipoproteins, Amphipathic lipids and lipid bi layer, Metabolism.

4) **Chemistry of Amino acids and proteins**: definition of amino acids, Classification based on structure, requirement, metabolic fate, solubility, Physical properties of Amino acids, Chemical properties of amino acids. iso electric pH. Non standard amino acids, Metabolism.
Proteins: Definition, Structure, structural classification, Functional classification. Peptide bonds an structural Motifs in protein such as A helix, B pleated sheets etc, Reactions of proteins such as denaturation, heat coagulation, salting out, reaction with acids, reactions with alkali, precipitations by heavy metals, precipitations by organic solvents, precipitation by alkaloid reagents.

5) **Nucleotides and nucleic acids:** Nucleotides, Purines and Pyrimidines. Sugars in nucleotides, DNA structure, Coiling and packaging of DNA, Histones, Genes and chromosomes. RNA types and structure of RNA & Metabolism.

6)**Vitamins:** Fat soluble and water soluble vitamins, Uses of Vitamins, Deficiency disorders.

7) **Nutrition:** Diet, calculation of balanced diet, disorders of protein energy malnutrition.

8) **Water and electrolytes,** Acid Base balance: ECF, ICF, Intra cellular and extra cellular electrolytes. Dehydration.
Acidosis, alkalosis, Buffers, Means of maintaining pH.

9) Enzymes

10) Liver function test

11) Kidney function test

12 Thyroid function test

13) Molecular Biochemistry- DNA Replication, Transcription & Translation, Regulation of Genetic expression

14) Genetic Techniques; PCR, gene therapy

15) Hemoglobin metabolism

16) Hormones- Mechanism of Hormone action.

Practical-Clinical Biochemistry

- Laboratory safety : Fire, chemical, radiation ,handling of biological specimens, waste
- Disposal regulations, workplace hazardous.
- Specimen collection, identification, transport, delivery and preservation.
- Patient preparation for tests.
- Anticoagulants' and preservatives
- Regulations and precautions regarding transport of biological specimens
- Preparation of high quality water
- pH determination
- Preparation of buffers and determination of pH
- Measurement of radioactivity
- Practical's related to solvent extraction, Partition coefficient, Dialysis, Concentration,
- Desalting and Ultracentrifugation.
- Calibration of equipments and laboratory wares.
- Familiarization and usage of Colorimetry, specterophotometry, fluorimetry,
- flame photometry, atomic absorption spectroscopy, nephelometry, osmometry,
- Chemiluminesence, ion selective electrodes, flowcytometry.
- Chromatography : - Paper, Thin layer, Gel filteration, Ion exchange, HPLC, GLC,

symptoms), Thymus and Pineal Gland: Thymus:Functions, immunological role of thymus, Pineal gland: General features, Functions, control

Reproductive System: Physiology of reproduction: Sex determination and sex differentiation, Puberty: Control ofonset and stages, reproductive hormones; Gonadotropin (FSH & LH), Male Reproductive System: Testis: Structureand functions, Spermatogenesis, Structure of the sperm, Seminal tract and related glands, supporting structure,seminal fluid (semen), Endocrine functions of testis (Testosterone, Control of testicular activity) FemaleReproductive System, Female reproductive tract: Uterus and related structures, ovaries, ovarian hormones(Estrogen, Progesterone and Relax in) , Female Sexual Cycle: Changes in the ovaries and uterus (Menstrual cycle),Vagina and gonadotropin secretion Contraceptive measures

Central Nervous System: Organization and functions of nervous system Brain: Cerebral Hemisphere (Cerebrum),Basal Ganglia, Thalamus, Hypothalamus Brain stem: Midbrain, Pons, Medulla, Reticular formation, CerebellumSpinal Cord: Structure and functions, Ascending (Sensory) tracts, Motor (Descending) tracts Cerebrospinal FluidPeripheral Nervous system, Somatic Nervous System: Spinal nerves, Reflexes, Mono and Polysynaptic reflexes,Cranial nerves, Autonomic Nervous system (ANS): Sympathetic and Parasympathetic

Special Senses: The Smell: Olfactory receptors, Olfactory pathway, Physiology of olfaction, The Taste: TasteReceptors (Taste buds), Taste Pathway, Physiology of taste The Ear: Physiological Anatomy (External ear, MiddleEar, Inner ear, Cochlea), Physical Properties of sound, Mechanism of hearing, The Eye: Physiological Anatomy(Sclera, Choroid, Retina, Crystalline lens, photoreceptors), Visual Pathway, Image forming mechanism of eye, VisualAcuity, Visual reflexes, Accommodation, Defects of image forming mechanisms, Lacrimal Apparatus (Lacrimalgland, Lacrimal canaliculi, nasolacrimal duct, tears or Lacrimal fluid)

Skin and Temperature: Structure and function of skin, Temperature Regulation

Practical

Haemoglobinometry

- White Blood Cell count
- Red Blood Cell count
- Determination of Blood Groups
- Leishman's staining and Differential WBC count
- Determination of packed cell Volume
- Erythrocyte sedimentation rate [ESR]
- Calculation of Blood indices

4/5/2024

REGISTRAR

Practical Clinical Pathology

- Examination of Urine - Routine and Special tests
- Examination of Stool - Routine and Special tests
- Examination of Sputum - Routine and Special tests
- Semen examination - Routine and Special tests
- Examination of CSF - Routine and Special tests
- Examination of various body fluids-Pleural Fluid, Pericardial Fluid, Synovial
- Fluid, Ascetic Fluid
- Various methods of detecting HCG levels
- Structure and molecular organization of Chromosomes
- Identification of human chromosomes
- Karyotyping
- Direct chromosome preparation of Bone Marrow cells
- Culture techniques
- Banding techniques
- Sex Chromatin bodies
- Autoradiography of human chromosomes
- Chromosome Identification by image analysis and Quantitative cytochemistry
- Clinical Manifestations of chromosome disorders
- Organization of Histology Laboratory

PAPER:- CLINICAL MICROBIOLOGY

CLINICAL MICROBIOLOGY

THEORY

UNIT I

GENERAL MICROBIOLOGY

1. History and Pioneers in microbiology
2. Microscopy
3. Morphology of bacteria and other microorganism
4. Nomenclature and classification of microbes
5. Growth and nutrition of bacteria
6. Sterilization and disinfection
7. Bacterial toxins
8. Bacterial genetics
9. Antibacterial substances used in the treatment of infection and drug resistance in bacteria
10. Bacterial ecology-Normal flora of human body, Hospital environment, Air, Water and Milk

UNIT II

IMMUNOLOGY

1. Normal immune system
2. Innate immunity and acquired immunity
3. Antigens
4. Immunoglobulin
5. Complement
6. Antigen-Antibody reactions
7. Cell mediated immunity & humoral immunity
8. Hypersensitivity
9. Immunodeficiency
10. Auto-immunity

UNIT III

SYSTEMIC BACTERIOLOGY

1. Isolation, description and identification of bacteria
2. Staphylococcus and Micrococcus
3. Streptococcus
4. Neisseria
5. Corynebacterium
6. Bacillus:The Aerobic spore bearing bacilli

- Separation of various sugars, amino acids, lipids, drugs toxins etc. Urine amino gram.
- Electrophoresis: - Paper, Agarose gel, Cellulose acetate, PAGE, SDS-PAGE. Separation
- of serum proteins, lipoproteins, haemoglobin, globin chain and isoenzymes
- Tissue homogenization and cell disruption
- Cell fractionation methods
- Extraction of glycogen and its estimation
- Extraction of protein and its estimation
- Extraction of lipids and estimation of total lipids, glycolipid, phospholipids and cholesterol.
- Determination of saponification number and iodine number from oils
- Estimation of lacticacid and pyruvic acid
- Qualitative analysis of carbohydrate
- Detection of unknown sugars
- Qualitative analysis of proteins
- Isolation of DNA and RNA
- Estimation of DNA and RNA
- Agarose gel electrophoresis of DNA

PAPER:- CLINICAL PATHOLOGY

- Examination of Urine - Routine and Special tests
- Examination of Stool - Routine and Special tests
- Examination of Sputum - Routine and Special tests
- Semen examination - Routine and Special tests
- Examination of CSF - Routine and Special tests
- Examination of various body fluids-Pleural Fluid, Pericardial Fluid, Synovial Fluid, Ascetic Fluid
- Various methods of detecting HCG levels
- Structure and molecular organization of Chromosomes
- Identification of human chromosomes
- Karyotyping

- Direct chromosome preparation of Bone Marrow cells
- Culture techniques

- Banding techniques
- Sex Chromatin bodies
- Autoradiography of human chromosomes
- Chromosome Identification by image analysis and Quantitative cytochemistry
- Clinical Manifestations of chromosome disorders
- Anemia and other disorders of Erythropoiesis
- Disorders of Leucopoiesis
- Homeostasis & its investigations
- Investigations of Thrombotic tendency
- Laboratory control of Anticoagulant , Thrombotic and platelet therapy
- Collection and handling of Blood
- All Routine and special Hematological Investigations
- Blood and Bone Marrow preparations
- Leucoproliferative disorders with special references to Leukemia
- Automation in Hematology
- Cytochemistry of Leukemic cells
- Amniocentesis
- Bone marrow transplantation
- Application of different Microscopes
- Preparations of various Reagents and Stains used in Hematology
- Immunophenotyping
- Flowcytometry
- Molecular techniques in Hematology

SKILLS TO ACQUIRE

BACTERIOLOGY

1. Aseptic practice in Lab and safety precautions
2. Washing and Sterilization of glasswares
3. Care and operation of microscopes viz. Dark ground, Phase contrast and Fluorescent microscope,(Electron microscope.
4. Operation and maintenance of Autoclave, Hot air oven, Distillation plants, Filters like Sietz and Membrane and sterility test and Testing of disinfectant-Phenol coefficient test and its uses.
5. Care and maintenance of common laboratory equipments
6. Collection of specimens for Microbiological investigations
7. Preparations of stains viz. Grams, Alberts, Capsules, Spores, Ziehl Neelsons,etc and performing of staining
8. Preparation and pouring of media- Nutrient agar, Blood agar, Mac Conkey agar, Sugars, Kligler iron agar, Robertson's cooked meat, Lowenstein Jensen, Sabouraud's
9. Preparation of reagents-Oxidase, Kovac, etc
10. Identification of bacteria of medical importance upto species level(except Anaerobes which could beupto generic level)
11. Preparation of antibiotics discs: performance of Kirby Bauer, Stokes, etc
12. Disposal of contaminated materials
13. Quality control of media, reagents, etc.
14. Techniques for Anaerobiosis

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IMMUNOLOGY

1. Collection and preservation of serum.
2. Performance of common serological test
3. Immuno electrophoresis
4. ELISA
5. CD4
6. Skin test - Montoux test

MYCOLOGY

1. Collection and processing of clinical specimens for fungi.
2. Special techniques like Wood lamp examination, hair baiting techniques, slide cultures.
3. Stoke cultures maintenance

PARASITOLOGY

1. Examination of faeces for ova and cysts: Direct and Concentration method.
2. Egg counting techniques.
3. Examination of peripheral blood, Urine, CSF, and other fluids for parasites.
4. Permanent staining technique for parasites.

VIROLOGY

1. Preparation and identification of CPE in various tissue cultures.
2. Serological test for viral infections
3. Handling of experiment animals and collection of various samples for evidence of viral infections in animals.
1. Laboratory diagnosis of AIDS
2. Laboratory diagnosis of Hepatitis
3. Laboratory diagnosis of Dengue
4. Safety measures

PAPER:- CLINICAL HEMATOLOGY

1. Red Blood Cells :
a. Normal morphology count
b. Isolation from whole blood & count
c. Effect on count & morphology of physiochemical parameters & the diseased state
d. Red cell anomalies & their relevance w.r.t. normal & diseased state
2. Blood Transfusion :
a. Pre-requisitement & the complication of mis-matched transfusion.
b. Methods of blood matching

7. Clostridium: The anaerobic spore bearing bacilli
8. Enterobacteriaceae
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9. Vibrios and Campylobacter
10. Haemophilus and Bordetella
11. Brucella
12. Mycobacteria
13. Actinomyces and Nocardia
14. Pseudomonas
15. Spirochaetes
16. Chlamydiae
17. Rickettsiae
18. Mycoplasma & Ureaplasma

UNIT IV

VIROLOGY

1. Classifiacation of viruses
2. Morphology, Virus structure
3. Viral replication
4. Pathogenicity of viruses
5. Bacteriophages
6. Pox viruses
7. Herpes viruses
8. Arboviruses
9. Orthomyxxovirus
10. paramyxoviruses
11. Enteroviruses: Polio &other enteric viruses
12. Hepatitis viruses
13. Rabies viruses
14. Human immunodeficiency viruses .

UNIT V

PARASITOLOGY

1. Protozoan parasites of medical importance

Entamoeba, Giardia, Trichomonas, Leishmania, Trypanosoma, Plasmodium, Toxoplasma, Pneumocystis Carinii

2.Helminths: All those medically important helminths belonging to Cestodes, Trematodes and Nematodes

Cestodes: Diphyllobothrium, Taenia, Echinnococcus, Hymenolepis,

Nematodes: Trichuris, Trichinella, Strongyloides, Ancylostoma, Ascaris, Enterobius, Filarial worms, Dracunculus medinensis, etc.

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UNIT VI

MYCOLOGY

1. The morphology and reproduction in fungi
2. Classification of fungi
3. Opportinistic fungi
4. Superficial mycotic infections
5. Fungi causing subcutaneous mycoses
6. Fungi causing systemic infections
7. Laboratory diagnosis of fungal infections

UNIT VII

CLINICAL MICRO BIOLOGY

1. Laboratory diagnosis of Meningitis, Lower respiratory tract infection, Upper respiratory infection, Genital tract infection.
2. Gastroenteritis
3. Blood stream infection
4. Hospital acquired infection and Biomedical waste management

Practical

- Automation in Haemtology
- Cytochemistry of Leukaemic cells
- Amniocentesis
- Bone marrow transplantation
- Application of different Microscopes
- Preparations of various Reagents and Stains used in Haematology
- Immunophenotyping
- Flowcytometry
- Molecular techniques in Haematology

PAPER :- Blood Transfusions & IMMUNOHEMATOLOGY

Unit I Reception, labeling and recording of laboratory investigations
Cleaning of glassware, pipettes, E.S.R. tubes and counting chambers
Preparation of capillary pipette, distilled water, reagents, buffers

Unit II Collection of blood, preparation of blood smear, staining of blood and bone marrow smears.

Unit III Measurement of hemoglobin, counting of leucocytes, erythrocytes, platelets and reticulocytes.
Recognition of blood cells in peripheral blood smears

Unit IV Determination of haematocrite and E.S.R., preparation of haemolysate and determination of alkali resistant
hemoglobin, paper electrophoresis of hemoglobin.
Test for sickle celling, bleeding time, coagulation time, prothrombin time, and kaolin cephalin clotting time.

Unit V Abo blood grouping and Rh typing
Performance of direct and indirect coombs test, red cell agglutination test (screening Paul bunnel test).

Unit VI Preparation for the demonstration of L.E. Cell phenomenon.

Unit VII Blood donor selection & screening
Blood collection and preservation, principal of clearing and preparing transfusion bottle and tubing sets – preparation and composition of anticoagulant – preservative solutions.

Unit VIII Transfusion reaction and their investigations

Immunohematology

1 Blood & blood group antigens: General characteristics of ABO, Lewis, Rh, Mn & Xg antigens. Leucocyte & platelet & is antigens. Blood ransfusion, Erythroblast sis fetails.
2 Molecular structure of hemoglobin. Genetic significance of Hemoglobin, structural variation , chemical & biochemical characteristics of Hemoglobin biosynthesis.

1. Blood Grouping

- Introduction
- Human Blood Group system
- ABO Subgroups
- Red Cell Antigen
- Natural Antibodies
- Rh. System
- Rh. Antigens & Rh Antibodies
- Hemolytic Diseases of New born & Prevention
- Principal of Blood grouping, antigen-antibody reaction.
- Agglutination, Haemag glutination, Condition required for antigen antibody reaction
- Blood grouping techniques-Cell grouping, Serum grouping
- Method for ABO grouping Slid & Tube Method Cell grouping Serum grouping Rh grouping by slide & tube method
- Difficulties in ABO grouping
- Rouleaux formation how it interfere with Blood grouping
- Auto agglutinins.
- Antiserum used in ABO test procedures, Anti-A, Anti-B, Anti-AB Antiserum
- Inheritance of the Blood groups;
- Control A & B Cells preparation Auto Control
- Medical applications of Blood groups

2. Blood Transfusion

3. White blood cells & platelets;-
a. Morphology count & methods of isolation
b. Effect on count & morphology of cell by the physiochemical parameters, diseased. State & the relevance of condition of the diseases
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1. Anaemia's :
a. Definition (in general) & courses
b. Types of anemia & their classification
c. Physiochemical, characteristic features & eterology of a plastic anemia, hemolytic, megaloblastic
d. Clinical features & diagnosis
5. Leukaemia
a. Definition (in general) & heir etrology
b. Classification of leukaemia
c. FAB classification
d. Etiologies, physiochemical features of different type o leukaeia,s with reference to clinical states
e. Diagnosis of different types of leukaemias
6. Coagulation studies;
a. General pathway (intrinsic & extrinsic)
b. Properties (physiochemical) mode of action of coagulation factors
c. Platelet studies, platelet function tests (for different Coagulation factors) > Effect of promoters & inhibitors at diff steps in coagulation, their solution & mode of action.
d. Diseases associated with coagulation disorders, their etrology & characteristics features.
7. Red Cell mass studies'
a. Chemical method & radioactive methods
b. Red Cell function studies
- Anaemia and other disorders of Erythropoiesis
- Disorders of Leucopoiesis
- Haemostasis & its investigations
- Investigations of Thrombotic tendency
- Laboratory control of Anticoagulant , Thrombotic and platelet therapy
- Collection and handling of Blood
- All Routine and special Haematological Investigations
- Blood and Bone Marrow preparations
- Leucoproliferative disorders with special references to Leukaemias
- Automation in Haemtology
- Cytochemistry of Leukaemic cells
- Amniocentesis
- Bone marrow transplantation
- Application of different Microscopes
- Preparations of various Reagents and Stains used in Haematology
- Immunophenotyping

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- Flowcytometry
- Molecular techniques in Haematology

Practical- Clinical Hematology

- Haemopoiesis
- Anaemia and other disorders of Erythropoiesis
- Disorders of Leucopoiesis
- Haemostasis & its investigations
- Investigations of Thrombotic tendency
- Laboratory control of Anticoagulant , Thrombotic and platelet therapy
- Collection and handling of Blood
- All Routine and special Haematological Investigations
- Blood and Bone Marrow preparations
- Leucoproliferative disorders with special references to Leukaemias

- Principal & Practice of blood Transfusion
- Blood Transfusion service at District Level
- Guide lines for the use of Blood Appropriate use of Blood Quality Assurance
- Antilogous Blood Transfusion practices.
- Objectives of Quality Assurance in Blood Transfusion services, Standard operating procedures for usage, donation & storage of blood screening of donor compatibility testing, safety procurement of supplies.

3. Blood Donation

- Introduction
- Blood donor requirements
- Criteria for selection & rejection
- Medical history & personal details
- Self-exclusion
- Health checks before donating blood
- Screening for TTI

4. Blood Collection

- Blood collections packs
- Anticoagulants
- Taking & giving sets in Blood transfusion
- Techniques of collecting blood from a doctor
- Instructions given to the donor after blood donation
- Adverse donor reaction

5. Testing Donor Blood

- Screening donor's blood for infectious agents –HIV, HCV, HBV, Trepanoma palladium, Plasmodium HTLV.
- Bacterially contaminated Blood

6. Blood Donor Records

- Blood donation record book
- Recording results.
- Blood donor card

7. Storage & Transport

- Storage of blood
- Changes in blood after storage
- Gas refrigerator
- Lay out of a blood bank ref refrigerator
- Transportation

8. Maintenance of Blood Bank Records

- Blood bank temperature sheet
- Blood bank stock sheet
- Blood transfusion request form.

9. Compatibility Testing

- Purpose
- Single tube compatibility techniques using AHG reagent
- Emergency compatibility testing
- Difficulties in cross matching
- Labeling & Issuing cross-matched blood

10. Blood Components

- Collection of blood components of fractional transfusion
- Platelets packed Red Cell Platelet rich Plasma, Platelets concentrate
- Preparation of concentrated (packed) Red Cells
- Techniques of preparation.

11. Blood Transfusion Reaction

- Investigation of a Transfusion reaction
- Hemolytic transfusion reaction
- Actions to take when transfusion reaction occurs.

Practical Blood Transfusion

- **Blood Bank Administration**

a) Record Keeping
26
b) Computerization in blood transfusion services.
c) Blood grouping ABO
d) PH typing various techniques.
• **Cross Matching**
a) Tube test
b) Slide Test
c) DU Test
d) Sub Grouping Test
• **Coomb's Test**
a) Direct comb's test
b) Indirect comb's test
• Compatibility testing for blood transfusion cross matching test.
a) 5% cell suspension and 10% cell suspensions.
b) HIV and AIDS demonstration
• Haemopoiesis
• Anaemia and other disorders of Erythropoiesis
• Disorders of Leucopoiesis
• Haemostasis & its investigations
• Investigations of Thrombotic tendency
• Laboratory control of Anticoagulant , Thrombotic and platelet therapy
• Collection and handling of Blood
• All Routine and special Haematological Investigations
• Blood and Bone Marrow preparations
• Leucoproliferative disorders with special references to Leukaemias
• Automation in Haemtology
• Cytochemistry of Leukaemic cells
• Amniocentesis
• Bone marrow transplantation
• Application of different Microscopes
• Preparations of various Reagents and Stains used in Haematology
• Immunophenotyping
• Flowcytometry
• Molecular techniques in Haematology

PRACTICAL

1. Basic Hematological Techniques, Characteristic of good technician, Preparation of specimen collection material, Lab. Request from, Basic steps for drawing a blood specimen by vein puncture. Complication of vein puncture, Patient after care, Specimen rejectin criteria for blood specimen, Hemolytic of blood, Blood collection by skin puncture (Capillary Blood), Arterial puncture, Deciding specimen types and selection of , Anticoagulant-EDTA, Citrate, Oxalate, Heparin, sodium fluoride., Separation of serum, Separation of plasma, Changes in blood on keeping, Maintenance of specimen identification, Transport of the specimen, Effect of storage on Blood Cell Morphology,
1. Universal precautions.
2. Basic requirements for hematology laboratory
3. Glassware's for Hematology
4. Equipments for Hematology
5. Anticoagulant vial preparation
6. Complete Blood Counts
7. Determination of Hemoglobin
8. TRBC Count by Hemocytometers
9. TLC by Hemocytometer
10. Differential Leukocyte count
11. Determination of Platelet Count.
12. Determination of ESR by win robes
13. Determination of ESR by Wintergreen's Method

14. Determination of PCV by Wintrobes
15. Erythrocyte Indices-MCV, MCH MCHC
16. Reticulocyte Count
17. Absolute Eosinophil Count
18. Morphology of Red Blood Cells
19. Blood grouping & Cross Matching
20. Reserves grouping
21. Antigloubintest
22. Rh. Typing
23. Donor Blood Connection Techniques
24 .Laboratory in Good Criteria for Save Blood Collection, Quality control in Blood Banks. Risk assessment for AIDS and Serum hepatitis.
24. Basic knowledge of disease transmissible disease example HIV, Sera rum hepatitis B and C, VDRL, and Malariya

Paper:-. Histopathology

Introduction to Histology, the cell, cell Organelles, nucleus, cell division, tissues, fresh & fixed tissues.

Different types of Embedding Viz. Wax, Resin, and Cryostat etc. Basic Cytology

Theory of Histopathology Reception of specimens, Histopathology of Tumor cell, Histopathology of Liver Kidney Adrenal Ovary Testis.

Fixation of tissue, different kind of fixatives, sample fixative, compound fixative, formaldehyde, mercuric chloride, osmium, Picric acid, alcohols, other acids, formalin, buffered formalin, osmic acid, zenleer soln, he; ly's soln, cytological fixatives, nuclear fixatives, fixation of smear etc., decalcification,

method of decalcification, assessment of decalcification, soln for decalcification.

Processing of tissue, dehydration, impregnation in the wax, manual and automatic tissue processor, gelatin embedding, celloidin embedding, double embedding, cytological fixatives, preparation of different smears, vaginal, sputum, membrane.

Microtome, instrument, principle, use in section cutting, parts and working of commonly used microtome, different kinds of microtome, rotary, base sledge, sliding, law temperature microtome, cryostat, microtome knives, homing and stropping knives.

Section cutting o paraffin sections, section preparation from frozen sections, fixing of tissue to slide, preparation of celloidin section and fixation. Staining techniques, natural dyes, synthetic dyes, basic andacidic dyes, haematoxylin staining, Pap, flicker & Conn, methanamine silver nitrate, ziehl neelsen's stain,propylene glycol sudan technique, papanicolaou, harn's alum, Haematoxylin, acridine orange technique.

Unit I: Handling of fresh histological specimen (tissues)cryo/frozen sections of fresh and fixed tissues freeze dryingLipids identification and demonstrationMicro organisms in tissues various staining technique for their demonstration and identificationNucleic acids DNA and RNA special stains and proceduresCytoplasm constituents and their demonstrationCervical cytology basis of detection of malignant and premalignant lesionsHermoral assessment with cytologic techniques and sex chroatis and pregnancy testsCells and organs of immune systemImmunoglobulin's antibodies and humoral immune responseAllergyRheumatological diseases and investigations.

Unit II Method of preparing stains

Method of preparing stains & Fixatives. Theory of Tissue processing and embedding, Theory of H & E staining.

Unit III Use Microtome Tissues section

Introduction, cutting Embedding and preparation of blocks Fixation of Tissue with DPX mount Theory of frozensection preparation.

Unit IV Preparation of smear

Preparation of smear for Fine needle aspiration cytology Pap's smear theory and identification of cells in a normal vaginal smear.

Unit V Stool examination

Normal abnormal constituent.

Normal and abnormal constituent of Urine, Normal and abnormal constituent ofamniotic fluid Normal and abnormal constituent of Semem analysis.

Equipment used in histopathology, their merits and demerits and care to be taken:

a. Tissue processor
b. Microtome
c. Knife sharpener
d. Automatic slide strainer
e. Knives
f. Freezing microtome cryostat
g. Hot plate
h. Water bath

4. Decalfication-method, advantage and disadvantage of each method.
5. Frozen section and Cryostat techniques, staining and mounting technique morbid anatomy
6. Tissue processing-fixation Dehydrate, clearing impregnation in paraffin. Making of paraffin block and
section cutting errors in section cutting and there correction.
7. Preparation of different types special stains. Histo-chemical and Cyto-chemical techniques Immune
Cytochemical staining.

Practical

- Organisation of Histology Laboratory
- Histological equipments
- Reception and recording of tissue specimen
- Tissue processing and Microtomy including frozen
- Theory of staining
- Preparation and quality control of all routine and special stains used in istopathology
- All staining techniques and their interpretation
- Immunohistochemistry
- Molecular markers of malignant neoplasms
- Molecular techniques
- Immunofluorescent techniques
- Enzyme histochemistry
- Museum techniques
- Autopsy Techniques
- Automation in Histological Techniques
- Histopathology, Reception of specimens, Histopathology of Tumor cell
- Histopathology of Liver, Kidney, Adrenal, Ovary, Testies
- Method of preparing stains & Fixatives.
- Use of Microtome, Tissue section cutting
- Embedding and preparation of blocks
- Fixation of Tissue with DPX mount
- Reception and recording of tissue specimen
- Tissue processing and Microtomy including frozen
- Theory of staining
- Preparation and quality control of all routine and special stains used in Histopathology
- All staining techniques and their interpretation
- Immunohistochemistry
- Molecular markers of malignant neoplasms
- Molecular techniques
- Immunofluorescent techniques
- Enzyme histochemistry
- Museum techniques
- Autopsy Techniques
- Automation in Histological Techniques

Paper:- CYTOLOGY

Cytology

Handling of fresh histological specimen (tissues) cryo/frozen sections of fresh and fixed tissues, freeze drying Lipids identification and demonstrationMicro-organisms in tissues-various staining

technique for their demonstration and identificationNucleic acids, DNA and RNA special stains and proceduresCytoplasmic constituents and their demonstration.
Cervical cytology-basis ofdetection of maligrant and premalignant lesions.
Hermoral assessment with cytologic techniques and sex chromatis and pregnancy test.
Cells and organs of immune systemImmunoglobulins, antibodies and humoral immune response AllergyRheumatologic diseases and investigations.
Tissues requiring special treatment i.e. eye ball Bone marrow biopsy under calcified bones.
Neuropathology techniquesEnzyme histochemistry demonstrations of phosphatases dehydrogenases oxidases and peroxidases etc.
Electron microscope working principles components and allied techniques for electron microscopy ultra-microtomy Museum techniquesAspiration cytology principles indications and utility of the techniques with special emphasis on role of cytotechnician in FNAC clinics Infection and immune system Caner Immunology
Tissue typing for kidney transplant

Practical cytology

- Morphology and Physiology of cell
- Cytology of
  - Female genital Tract
  - Urinary Tract
  - Gastrointestinal Tract
  - Respiratory Tract
  - Effusions
  - Miscellaneous Fluids
- Collection,Preservation,Fixation and Processing of various Cytological Specimen
- Preparation and Quality control of various stains and reagents used in cytology
- All routine and special Staining techniques in cytology
- FNAC
- Immunocytochemistry
- Automation in Cytology

Dissertation

Viva- voce: -

SANTOSH DEEMED TO BE UNIVERSITY
REGISTRAR
GHAZIABAD, NCR DELHI

SANTOSH DEEMED TO BE UNIVERSITY

PRATAP VIHAR, GHAZIABAD, UP

MASTER OF SCIENCE IN CLINICAL PSYCHOLOGY

Guidelines & Syllabus

EFFECTIVE FROM AUGUST (2021)

SESSION 2021-2022

DURATION – 2 YEARS

DEPARTMENT OF PSYCHIATRY

SANTOSH MEDICAL COLLEGE HOSPITALS

NO.-1, AMBEDKAR ROAD, GHAZIBAD, UP.

RESTRUCTURED SYLLABUS-MSc- CLINICAL PSYCHOLOGY

This is two (2) years PG course, comprises of eight (8) papers

MSc-1ST yr. There will be four (4) papers & in 2nd yr. again there will be four papers.

Each paper will consist of two sections (A & B). Each section will comprise of 50 marks therefore as a whole each paper will be of 100 marks.

Structuring is as follows:

SNO	PAPERS-FIRST YR	MARKS	SNO	PAPERS-SECOND YR	MARKS
1.	Applied Psychology (Abnormal Psychology, Clinical Psychology, Cognitive Psychology & Neuropsychology)	100	5.	Psychotherapy & Educational Psychology & (Slow Learning & Learning Disability)	100
2.	Bio- Psycho-Social Perspective of Behaviour & Personality Orientation	100	6.	Community Psychology	100
3.	Life Span & Development of Behaviour & Social Psychology (Advanced)	100	7.	Mental Health Healing Practices, Rehabilitation & Stress Management	100
4.	Research Methodology & Statistics	100	8.	Elective Paper (any one) A. Clinical Psychology B. Counselling Psychology C. Industrial/ Organisational Behaviour	100 (Internal)

REGISTRAR
GHAZIABAD

DETAILS OF EACH PAPER ARE AS UNDER:

COURSE	FIRST YEAR	T	P	C/ Pr /A
PAPER-1	**APPLIED PSYCHOLOGY (ABNORMAL PSYCHOLOGY, CLINICAL PSYCHOLOGY, COGNITIVE PSYCHOLOGY & NEUROPSYCHOLOGY) & PSYCHOPATHOLOGY** (100 HRS) (100 MARKS)			
	SECTION-A (50 HRS) (50 MARKS)			
UNIT I	**BACKGROUND:** Defining Psychology, Origin, Nature, Scope & Its Application,			
Unit II	**KEY CONCEPTS:** Attention, Perception, Learning, Memory, Intelligence, Thinking, Emotions & Motivation.			
UNIT III	**EXCECUTIVE FUNCTIONING:** Orientation & Application in Clinical Practices		1	
UNIT IV	**ABNORMAL PSYCHOLOGY, CLINICAL PSYCHOLOGY & COGNITIVE PSYCHOLOGY-** • Different Approaches • Different Assessment. • Role of clinical psychologist • Courses & Job opportunities			A
UNIT V	**NEURO-PSYCHOLOGY & NEURO-PSYCHOLOGICAL REHABILITATION:** a. Conceptual orientation, assessment & diagnosis b. Neuro psychological rehabilitation in following condition: Head injury trauma (chronic) Psychological disorder in neuro-psychological rehabilitation & neuro-biofeedback.		1	C
	SECTION- B-(50 HRS) (50 MARKS)			
	PSYCHOPATHOLOGY			

UNIT VI	**PSYCHOPATHOLOGY**: 1. a. Classification & Theoretical Model a) Approaches in Psychopathology b) Psychodynamic & Phenomenological Approach, c) Descriptive approach d) Interruptive approach e) Experimental approach 1. Definition of Mental Health Disorder 2. Sign & symptoms of various psychological disorders 3. System Of Classification (ICD-10, DSM-V) 4. Approaches to clinical case formulation, principal & provisional diagnosis based on classification system (ICD-10 & DSM-V)	1		2C
UNIT VII	**PSYCHOPATHOLOGY & NEURO-COGNITIVE DISORDER**: characteristics, Sign & symptoms & etiology: a. Dementia b. Delirium c. Head injury d. Epilepsy Amnesia			2C
UNIT VIII	**PSYCHOPATHOLOGY & BEHAVIOURAL DISORDER DUE TO PSYCHO-ACTIVE SUBSTANCE USE**: Alcohol, opioid, cannabinoids, cocaine, stimulants, hallucinogens, tobacco, volatile, solvents & multiple drug use.			
UNIT IX	**PSYCHOPATHOLOGY OF THOUGHT DISORDER:** Schizophrenia, schizotypal & delusional disorder			
UNIT X	**MOOD & AFFECTIVE DISORDER**			
UNIT XI	**PSYCHOPATHOLOGY OF NEUROTIC, STRESS-RELATED AND SOMATOFORM DISORDERS**:			
UNIT XII	• Personality disorder • Mental retardation, Slow learning & Childhood disorder • ADD, ADHD, Conduct Disorder			

HELP READING:

FOR SECTION-A

Text Books:

1. Baron, R.A. (2004). *Psychology*, 5th ed. New Delhi: Pearson education
2. Morgan, C.T., King, R.A., Weisz, J.R., & Schopler, J. (1993). *Introduction to Psychology*, 7th ed. New Delhi: Tata McGraw Hill.

Reference Book

1. Bootzin, R., & Bower, G.H. (1991). *Psychology today- An Introduction*. 7th ed. New York: Mc Graw Hill Inc.
2. Coon, D. (1983). *Introduction to Psychology: Exploration and Application*. New York: West Publishing Co.
3. Feldman, R. (2011). *Understanding Psychology*.10th edition. New Delhi: Tata McGraw Hi
4. Santrock, J.W. (2006). Psychology Essentials (Updated 2nd ed.). New Delhi: Tata McGraw Hill.
5. Coon, D., & Mitterer, J.O. (2007). Introduction to Psychology (11th ed.). New Delhi: Cengage Learning India Pvt Ltd.
6. Synder. C.R., Lopez, S. J., & Pedrotti, J.T. (2011) Positive Psychology – The scientific and practical explorations of human strengths (2nd Ed). New Delhi: Sage Publications.
7. Baumgardner, S.R., & Crothers, M.K. (2015). Positive Psychology. New Delhi. Dorling Kindersley (India) Pvt Ltd

FOR SECTION B

Text Books:

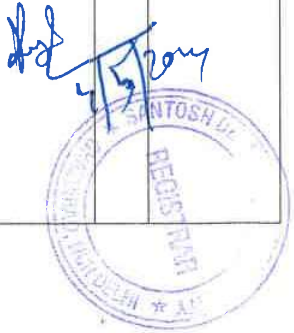
1. Blaney, PH, Krueger RF & Million T. (2015). Oxford Textbook of Psychopathology. III Ed. London: Oxford University Press.
2. Sarason, I.G., & Sarason, B.R., (2005) *Abnormal Psychology*- The problem of Maladaptive behavior. India: Dorling Kindersly.
3. Colman Abnormal psychology
4. Page Abnormal Psychology

Reference Books:.

1. ICD-10 International Classification of Disorders: WHO
2. Fish Psychopathology
3. Casey p & Kelly B (2007).Fish's Clinical Psychopathology- Signs and Symptoms in Psychiatry, III Ed. Gaskell.
4. Sadock, B.J., & Sadock, V.A. (2007) (2003). Kaplan & Sadock's Synopsis of psychiatry: Behavioural sciences/clinical psychiatry (9th. Ed.). Philadelphia: Lippincott Williams & Wilkins.
5. Ahuja N (2002). A short text book of Psychiatry (5th edition). New Delhi. Jaypee Brothers.
6. Hecker, S.E. & Thorpe, G.L. (2005). Introduction to clinical psychology: Science, practice & ethics. Delhi: Pearson Education, Inc.
7. Diagnostic and Statistical Manual of Mental Disorders: DSM-5. Arlington, VA: American Psychiatric Publishing, 2013.

8. Barlow, D. H., & Durand, V.M. (2015). Abnormal Psychology. An Integrative Approach. 7th edition. New Delhi. Cengage Learning India Private Ltd.
9. Nolen-Hoeksema, S. (2017) Abnormal Psychology. 7th Edition. New York. McGraw Hill
10. Butcher, J.N., Hooley, J.M., & Mineka, S. (2013). Abnormal Psychology. 16th Edition. Upper Saddle River. Pearson Education Inc.
11. American Psychiatric Association. (2013). Diagnostic and statistical manual of mental disorders (5th ed.).

COURSE	FIRST YEAR	T	P	C/P/ A
PAPER-2	**BIO- PSYCHO-SOCIAL PERSPECTIVE OF BEHVAIOR & PERSONALITY ORIENTATION** (100 HRS) (100 MARKS)			
	SECTION A (50 HOURS) (50 MARKS)			
	BIO- PSYCHO-SOCIAL PERSPECTIVE OF BEHVAIOR			
UNIT I	Bio-psychosocial basis of behaviour in terms of aetiology (predisposing, precipitating & perpetuating factors in combination) (Heredity & Constitutional Factors)			
UNIT II	**ANATOMY AND FUNCTIONAL STATUS OF NERVOUS SYSTEM**: a. Structure of neuron, Types of neurons, Functions of neurons, Synapse & Neuronal Conduction. b. Synaptic conduction & neurotransmitters c. Brain Lobes: frontal, temporal, & occipital. d. Brain: forebrain, midbrain, hindbrain, cerebellum, Cerebra & Cerebral cortex. e. Central nervous System: Brain & Spinal Cord. f. Peripheral Nervous System: Somatic Nervous System & autonomic Nervous System, Sympathetic Nervous System & Parasympathetic Nervous System. g. Endocrine Nervous System.			
UNIT III	**ATTENTION**: a. Sensation & Threshold b. Vigilance, distraction, fluctuation, common sensical errors & effect of anxiety & attention. c. Perception: perception & its relation with sensation & attention. d. Synaesthesia, Subliminal perception. Perceptual constancy & the dimensional perception. e. Perception: depth, time, visual and auditory Perception. f. Haptic Perception (touch).			2C



	g. Subliminal perception. Agnosia.			
UNIT IV	A. **PSYCHOLOGICAL PERSPECTIVE-** Personality, Parenting & Development, Adjustment & Stress B. **SOCIAL PERSPECTIVE**-family, neighbour, school & other environmental variables		2	
UNIT V	**META-COGNITION:** a. Concept of meta-cognition. b. Meta-cognition & learning difficulties issues in meta-cognition. c. Individual differences in meta-cognition.			
	SECTION B (50 HOURS) (50 MARKS)			
	PERSONALITY ORIENTATION			
UNIT VI	a. Introduction b. Definition of personality c. Personality & self –the difference Relevance of personality in clinical psychology.			
UNIT VII	**DYNAMIC THEORIES OF PERSONALITY:** a. Sigmund Freud b. Alfred Adler c. Caren Henry d. Eric fromm			
UNIT VIII	**TRAITS (DISPOSITIONAL) & DIMENSIONAL APPROACHES OF PERSONALITY:** a. Allport b. Eysenck c. Cattell R.B d. McCrae and Costa e. Single trait approach (Type-A, Type-B. Type-c, Type-D etc.)			
UNIT IX	**BEHAVIOURAL APPRACHES TO PERSONALITY** a. Pavlov b. Skinner c. Mowrer d. Hull			
UNIT X	**HUMANISTIC /EXISTENTIAL** a. Carl Rogers b. Abraham Maslow c. May Frankel			
UNIT XI	**OTHER THEORIES IN PERSONAL CONTRACT** a. Gestalt Theory b. Personal Construct Theory			
UNIT XII	**ASSESSMENT OF PERSONALITY** a. Conscious (rating scale, inventories, questionnaire & schedule) b. Unconscious (Projective tests methods of assessment)		2 + 2	

FOR SECTION A

4/5/2019

HELP READINGS:

1. Schneider M Alles (1990). An introduction to Physiological Psychology (3rd Edition) USA: Random House.
2. Walsh K. (2008). Neuropsychology. New Delhi: B.I. Churchill Livingstone Pvt. Ltd
3. Golden, C.J. & Charles, C.T. (1981). Diagnosis & Rehabilitation in clinical neuropsychology. New York: Spring Field.

Reference Books

1. Kolb, B. & Whishaw, I.Q. (2007). Fundamentals of human neuropsychology (6th ed). New York: Worth Publishers.
2. Kandel, E.R. Schwartz, J.H. & Jessel, T.M. (2000). Principles of neural science (4th.ed.). New York: McGraw-Hill.
3. Leukel, F. (1985). Introduction to physiological psychology (3rd.ed.). New Delhi: CPS Publishers.
4. Kalat, J.W. (2013). Biological Psychology. 11th edition. Cengage Learning.

FOR SECTION B

HELP READING:

Text Books:

1. Schultz D. P. & Schultz S. E(2017). Theories of Personality (10th Edn). Wadsworth Cengage Learning.
2. Hall, C. S., Lindzey, G., & Campbell, J. B. (1998). *Theories of personality*. New York: J. Wiley & Sons.

Reference Books:

1. Pervin, Oliver P. John - (1999) *Handbook of Personality: Theory and Research*, Guilford Press.
2. Allen (1997) Personality Theories, Development, Growth & Diversity. 2nd edition. Allyn& Bacon
3. Friedman (2003) Personality: Classic Theories and Modern Research. 2nd Edition: Pearson Education.
4. Freeman, F.S.(1971). Theory and Practice of Psychological Testing (3rd ed.).New Delhi: Oxford and IBH publishing Co.

5. Ewen, R.B. (2010) An Introduction to theories of personality.7th edition. USA Taylor & Francis group
6. Schultz, D.P. & Schultz, S .E. (2005).Theories of personality.8th edition. New Delhi: Cengage Learning India Private Ltd.

COURSE	FIRST YEAR			
PAPER-3	**LIFE SPAN & DEVELOPMENT OF BEHAVIOUR & SOCIAL PSYCHOLOGY (ADVANCED) (100 HRS) (100 MARKS)**			
UNIT	**TOPICS**	T	P	C/Pr/A
	SECTION-A (50 HRS) (50 MARKS)			
	LIFE SPAN & DEVELOPMENT OF BEHAVIOUR			
UNIT I	**CHILD DEVELOPMENT:** a. Introduction b. Concept of development c. Growth & development; d. prenatal development e. Infantile developmental stage f. Early, middle and late childhood g. Adolescent h. Young & late adulthood i. Old age.			
UNIT II	**FIELDS OF HUMAN GROWTH & DEVELOPMENT:** a. Sensory development b. Motor development c. Adaptive development d. Social development e. Cognitive development f. Communication development. g. Methods of studying behaviour barrios of psychology.		1	1
UNIT III	**THEORIES OF HUMAN DEVELOPMENT:** a. Arnold Gesell's Theory of development b. Jean Piaget theory of development c. Sigmund Freud theory of development d. Erick-Erickson theory of development e. Vygotsky theory of development f. Maline Clenin's theory of development.			
UNIT IV	**1. ETIOLOGICAL BASIS OF DEVELOPMENTAL DISORDERS:** a. Genetic b. Psychological & social c. Miscellaneous			
UNIT V	**TYPES OF DEVELOPMENTAL DISORDERS:** a. Sensory. b. Motor/neurological c. Communication d. Cognitive e. Temperamental & behavioural f. Social g. Emotional		2	
UNIT VI	**ASSESSMENT OF DEVELOPMENTAL DISORDERS:** a. Motor & sensory b. Speech & language			

4/5/2017

	c. Cognitive d. Social & emotional e. Adaptive f. Cultural aspects in development- family g. Development of child and adolescent in Indian Context, Physical, Emotional, Social & moral.			
	SECTION B			
	SOCIAL PSYCHOLOGY (ADVANCED) (50 HRS) (50 MARKS)			
UNIT I	a. Introduction b. Social psychology in medical settings c. Bio-psycho-social methods of diseases d. Importance of psychologists patient relationship in brings about change e. Does or don't s in communication f. Social climate in medical institution set up.			
UNIT II	**SOCIAL ANATOMY /Social PHYSIOLOGY/SOCIAL BIOCHEMISTORY/SOCIAL PATHOLOGY:** a. Social disorganization b. Crime & delinquency c. Suicide & Exide d. Probability & unemployment h. Dowry/ gambling/ and robbery.			A
UNIT III	**FACTORS THAT INFLUENCE PERSON'S PERCEPTION:** a. Influence of person's perception & inter personal relation b. Positive & negative perception c. Helios effect –positive & negative helio effect d. Fundamental attribution errors.			
UNIT IV	**ATTITUDE & MEAURMENT:** a. Introduction b. Attitude theories c. Factors influencing attitude formation d. Strategies to bring about attitude change. Stereotype & prejudice Measurement of attitude		I	
UNIT V	**STIGMA IN THE FIELD OF MENTAL HEALTH:** a. Introduction b. Definition of stigma c. Factors influencing attitude formation in relation to stigma. d. Stigma & various medical condition for example: Tuber chlorosis, leprosy, cancer & AIDS. e. Stigma in order to mental disorders in order to alcohol & drug Abuse with special reference to socio-cultural factors. f. Capabilities required to deal with stigma. g. Relevance to social change to root out stigma.			Pr
UNIT VI	**GROUP & LEADERSHIP** a. Introduction about group & leadership.			

	b. Group dynamic c. Style & leadership d. Relevance of group & medical condition of social psychology. e. How to form a group f. Formation of leader g. How to form a support group in order to deal with cancer, tuber chlorosis, & AIDS. h. How to form a support group in order to mental disorders in order to alcohol & drug Abuse with special reference to socio-cultural factors. h. How to run a group effectively.			
UNIT VII	**WHAT IS HEALTH EDUCATION:** a. Introduction. **b.** Concept of health & hygiene (biological, psychological & sociological). **c.** Who provide health education? **d.** Health & pandemic psychology. Practice of health education- health protection, health promotion & health prevention.			
UNIT VIII	**SOCIAL INTERACTION** a. Social adjustment or adaptation. b. Social motives & ethics			

HELP READING:

Text Books:

1. Hurlock, E. B. (2001). *Developmental psychology*. Tata McGraw-Hill Education
2. Papalia, D. E., Olds, S. W., & Feldman, R. D. (2007). *Human development*. McGraw-Hill.

Reference Books:

1. Hoffman, L. N. W., Hoffman, L., Paris, S. G., & Hall, E. (1994). *Developmental psychology today*. McGraw-Hill College.
2. Papalia, D. E., Gross, D. L., & Feldman, R. D. (2003). *Child development: A topical approach*. McGraw-Hill Humanities, Social Sciences & World Languages.
3. Miller, P. H. (2002). *Theories of developmental psychology*. Macmillan.
4. Stricker, G. (1982). *Handbook of developmental psychology*. Prentice Hall.
5. Willem Doise, & Cornelis FM Van Lieshout. (1998). *Life-span developmental psychology*. John Wiley & Sons.
6. Papalia, D.E., Olds, S.W. & Feldman, R.D. (2009) *Human Development* (11th ed.) New York: Mcgraw- Hill

FOR SECTION B

HELP READING:

Text Books:

1. Baron, R. A., Bryne, D., &Branscombe, N. R. (2009). Social Psychology. 12thEd. New Delhi: Pearson Education.
2. Shelly Taylor, Social Psychology, Pearson Education, 12th Edition, New Delhi, 2011.
3. Kool, V.K. & Agraval, R. (2006). Applied Social Psychology, New Delhi: Atlantic Publishers.
4. Social Psychology, Lindgren

Reference Books:

1. Ann Cartwright (1964), Human Relations and Hospital Care, Routledge & K. Paul.
2. David Dickson, Owen Hargie, N. C. (Norman C.) Morrow (1997), Communication Skills Training for Health Professionals, Nelson Thornes.
3. Robin M. Kowalski, Mark R. Leary (Ed) (2004), The Interface of Social and Clinical Psychology, Psychology Press, UK.
4. Shirlynn Spacapan Oskamp (1988) *The Social Psychology of Health*, Sage Publications, India.
5. Myers, D.G. & Twenge, J.M. (2017). Social Psychology, International Student Edition. (12th edition). New York: McGraw – Hill Education.
6. Branscombe, N.R., Baron, R.A.& Kapur, P. (2017). Social Psychology. (14th edition). India: Pearson India Education Services Pvt Limited.

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COURSE	FIRST YEAR	T	P	C/A
PAPER-4	**REASEARCH METHODOLOGY & STASTISTICS (100 HRS) (100 MARKS)**			
	SECTION A			
	RESEARCH METHODOLOGY (50 HRS) (50 MARKS)			
UNIT I	**Introduction** a. What is research? b. Salient feature of scientific research. c. Concept of applied or basic research. 1. Variables a. Types of variables b. Controlling techniques of variables. 2. Quantitative & qualitative research. a. Problem hypothesis b. Development of quantitative & qualitative research. 3. Types of research 4. Purpose of research 5. Data interpretation and report writing.			1-A
UNIT II	**METHODS OF DATA COLLECTION:** 5. Observation a. Types of observation 1. Participant Observation & 2 Non-Participant Observation b. Interviewing c. Questionnaire d. Schedule e. Content Analysis 2. Secondary source of data collection; a. Design & survey 3. What is measurement 4. Scale of measurement 5. Development of scale of measurement I. Nominal, II. Ordinal, III. Interview & IV. Ratio 6. Concept of developing the scale a. Rating & attributing scale b. Reliability & validity of scale c. Sampling & techniques 7. Probabilistic & non-probabilistic samples a. Precision in sampling b. Confidence& determining the sample size c. Optimal sample size & statistic software.			1-A
UNIT III	**EPIDEMIOLOGY:** 1. Introduction 2. Epidemiological method 3. Definition & scope 4. Health & diseases 5. Measures use in epidemiology 6. Study design 7. Biased epidemiology			

SECOND YEAR

COURSE	SECOND YEAR	T	P	C/Pr /A
PAPER-5	**COMMUNITY PSYCHOLOGY & GERIATRIC PSYCHOLOGY (100 HRS & 100 MARKS)**			
	SECTION A (50 HRS) (50 MARKS)			
UNIT I	**COMMUNITY PSYCHOLOGY**			
	a. Introduction b. Definition, nature, scope of clinical Psychology c. Fields & application of clinical psychology History of community psychology			
UNIT II	**ECOLOGICAL HEALTH:** a. Population b. Pollution c. Alienation d. Urbanization			Pr
UNIT III	**PREVENTION, PROTECTION & PROMOTION:** a. Concept (prevention, protection & promotion) b. Perspective c. Prevention-primary, secondary & territory. d. Community based therapeutic programmes.			Pr
UNIT IV	**MODELS:** a. Behaviouristic model b. Mental health model c. Organizational model **d.** Social action model e. **Ecological model**: Noise, crowding, architectural factors, economic factors, in national social environment, Kelly's studies on coping in high stress environment. Social Cultural model			
UNIT V	• **EPIDEMIOLOGY:** a. Prevalence b. Incidences c. Morbidity d. How epidemiology studies help in identifying possible causes			
UNIT VI	**COMMUNITY CARE OF MENTAL ILLNESS** a. Drawbacks of long term institutional psychiatric care b. Deinstitutionalization of mental ill c. Advantages & disadvantages of community care of the mentally ill d. Mental health movement			Pr
UNIT VII	**PROMOTING COMMUNITY HEALTH:** a. Issues related to poverty, minority status & health. b. Early community identification programme. c. Promotion & community Health by reducing environmental hazard. Encouraging public participation information of public health policies.			Pr
	SECTION B (50 HRS) (50 MARKS)			

UNIT I	**GERIATRIC PSYCHOLOGY**			
	• Introduction • Definition, nature, and scope of clinical psychology. • Development of geriatric psychology. • Relation between geriatric population and medical care. • Relevance of old age homes and geriatric care giver.			
UNIT II	**ELDERLY PATIENTS:** • How to interview the elderly patients. • Psychological development of elderly people. • Pre-retirement counselling & generation of social support.			C
UNIT III	**COGNITIVE IMPAIRMENT AND DISORDERS AMONG ELDERLY:** • Generalized intellectual (delirium) impairment. • Memory disorder –dementia- a. Types of dementia Alzheimer's disorder.		1	
UNIT IV	**MENTAL DISORDERS AMONG ELDERLY** • Depression • Suicidal behaviour • Psychotic disturbances.		1	
UNIT V	**VARIOUS OTHERS GERIATRIC CONDITIONS:** • Adjustment disorder • Sleep disorder • Sexuality & sexual disorder.			
UNIT VI	**GERIATRIC COUNSELLING:** • Different stages • Relevance of religion & spirituality.			
UNIT VII	**ETHICAL ISSUES IN GERIATRIC PSYCHOLOGY:** • Euthanasia • Elder abuse • Homeless elders etc.			

HELP READING:

SECTION A

Text Books:

1. Julian Rappaport and Edward Seidman (Eds), (2000). *Handbook of Community Psychology*, Springer Publications.

Reference Books:

1. Ann Cartwright (1964), Human Relations and Hospital Care, Routledge & K. Paul.
2. Gershen Rosenblum, American Psychological Association Task Forceon Community Mental Health (1971), *Issues in Community Psychology and Preventive Mental Health*, Behavioral Publications.

COURSE	SECOND YEAR	T	P	C/Pr / A
PAPER-6	**PSYCHOTHERAPY & EDUCATIONAL PSYCHOLOGY (100 HOURS) (100 MARKS)**			
	SECTION A (50 HOURS)(50 MARKS)			
	PSYCHOTHERAPY			
UNIT I	**INRRODUCTION:** a. Definition & objectives of psychotherapy b. Types of psychotherapy: supportive, reductive, & reconstructive & & insight oriented. c. Basic principles of psychotherapy. d. Indication & contra Indication of psychotherapy. e. Ethical issues in psychotherapy.			
UNIT II	**DEFERENT PHASES OF PSYCHOTHERAPY:** a. Initial, middle & terminal b. Factors influencing therapeutic relationship c. Relationship building techniques. d. Role of psychological assessment in psychotherapy. e. Characteristics of the effective therapist.			
UNIT III	**APPROACHES TO PSYCHOTHERAPY:** a. Psychodynamic approach b. Cognitive behavioural approach c. Gestalt approach d. Humanistic approach e. Existential approach f. Eclectic approach			
UNIT IV	FAMILY THERAPY: a. Types of family therapy & marital therapy b. Family therapy for psychiatric disorder			
UNIT V	**PSYCHOTHERAPY FOR SPECIFIC CONDITIONS** a. Substance abuse disorder b. Sexual dysfunctions c. paraphilia's d. sexual abuse e. relaxation techniques f. Brief Psychotherapy g. Play therapy & psychodrama			
UNIT VI	**GROUP THERAPY:** a. Advantages of group therapy b. Stages in group information c. Types of group therapy d. Role of therapist in group therapy and preventing scapegoating & unhealthy influences. Self-help group.			
UNIT VII	**TRANSFERENCE:** a. Concept b. Interpreting transference **c.** Counter transference d. How to guard transference & counter transference			

3. T. Shanmugam "Community Psychology" Utsav Publishing Co.
4. Thomas, E., Kloos B., Hill J., Wandersman A., Elias M.J. & Dalton, J.H. (2012) Community Psychology: Linking Individuals and Communities, 3rd Edition. Wadsworth Publishing.

FOR SECTION B

Text Books:

1. Agronin. E & Maletta. *Principles and Practice of Geriatric Psychiatry*, (2nd Edition), Wolters Kluwer.
2. Chowdhry Paul D., Aging and the Aged: A Source Book, Inter India Pub., New Delhi, 1992

Reference Books:

1. Developmental psychology- a life-span Approach – Elizabeth Hurlock
2. Primary on Geriatric Care- Editor D E Rosenblatt, V S Nadarajan
3. Bellak Leopold: Karasu Toksoz B., Geriatric Psychiatry: A Handbook for Psychiatrists and Primary Care Physicians, Grune & Stratton, New York, 1976.
4. Dandekar Kumudini – Elderly in India. Sage Publishing, New Delhi, 1996.
5. Desai K.G. Aging in India. Tata Institute of Social Sciences, Bombay, 1982
6. Nair T.K., Community care of the Elderly: A Study of Family and Community based Services in Madras, Ramana K.V. Visakhapatanam.

HELP READING:

FOR SECTION A

Textbooks

1. Sharf, R.S. (2000). Theories of psychotherapy and counselling: Concepts and cases (2nd Ed.). Singapore: Brooks/Cole.
2. Trull, T.J., & Phares, E.J. (2001). Clinical psychology: Concepts, methods, and profession (6th Ed.). Belmont, CA: Wadsworth/Thomson Learning
3. Nichols, P.M & Schwartz C.R (2006). *Family Therapy –concepts and methods*, 7th edition. Allyn and Bacon, Boston, Pearson education, Inc.

Reference books

1. Brems, C. (2000). Dealing with challenges in psychotherapy and counselling. Singapore: Brooks/Cole.
2. Brems, C. (2001). Basic skills in psychotherapy and counselling. Singapore: Brooks/Cole.
3. Corey, G. (1996). Theory and practice of counselling and psychotherapy (5th ed.). Pacific Grove, CA: Thomson-Brooks/Cole.
4. Dryden, W. (2007). Dryden's handbook of individual therapy. (5th ed). Sage Publications: New Delhi.
5. Palmer, S. (ed.). (1999). Introduction to counselling and psychotherapy: The essential guide. New Delhi: Sage.
6. Bieling, P.J., MacCabe, R.E., & Antony, M.M. (2006). Cognitive-Behavioural Therapy in Groups NY: Guilford Pub.
7. Miltenberger, R.G. (2012). Behaviour Modification: Principles and Procedures. 5th edition. Wadsworth Cengage Learning.
8. Beck, J.S. 2011. Cognitive Behavior Therapy: Basics and Beyond. 2nd edition. The Guilford Press, New York.
9. Simos, G. 2002. Cognitive Behavior Therapy: A Guide for the Practicing Clinician, Vol 1. Brunner-Routledge, London.
10. Anthony, J.(2003). Psychotherapies in counselling. Anugraha Publications
11. Simons, J. & Griffiths, R. (2010). CBT for beginners. California Sage
12. Stewart, J. (.2013).Transactional counseling in action. 4th edition, Windy Dryden
13. Greenberg, L. (2011) –Emotion focused therapy (Theories of psychotherapy series), Kindle edition.
14. Howie, P., Prasad, S., & Kristel, J. (2013). Using art therapy with diverse populations: Crossing cultures and abilities. London, UK: Jessica Kingsley Publishers.

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	e. Psychotherapeutic formulation f. Manifestation of resistance **g.** Methods of handling resistance.			
	SECTION B (50 HOURS) (50 MARKS)			
	EDUCATIONAL PSYCHOLOGY			
UNIT I	**LEARNING DISABILITIES**: a. Introduction: educational psychology, concept & meaning of educational psychology b. Similarities & dissimilarities between educational psychology/general psychology/ school psychology c. Nature /scope/aims/ & objectives of educational psychology d. Application & limitation of educational psychology e. **Recent trends contemporary psychology**		1	
UNIT II	**LEARNING DISORDERS** a. Learning Difficulties & Disorders b. Nature & Causes of Learning Disorders Differences between above disorders			C/Pr /A (Any one)
UNIT III	**TYPES OF LEARNING DISORDERS** a. Reading b. Writing c. Arithmetical skills d. Motor Skills e. Speech & Language f. Information Processing Disorder Other Disorder		1+1	
UNIT IV	**PSYCHOLOGY OF GROWTH & DEVELOPMENT** with special reference to: a. physical development, b. sensory-motor development, c. cognitive & d. language development, e. social, moral, f. emotional development g. Academic development: • Reading • Writing • Arithmatic			
UNIT V	EDUCATIONAL CHALLENGES AMONG CHILDREN WITH SPECIAL NEEDS a. Gifted Children b. Slow learning c. Mental Retardation d. Remedial Teaching e. Special Education			

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COURSE	SECOND YEAR	T	P	C/Pr / A
PAPER-7	**INDIAN CONCEPT OF MENTAL HEALTH & HEALING PRACTICES & STRESS MANAGEMENT AND CRISIS INTERVENTION (100 HRS) (100 MARKS)**			
	SECTION A **(50 HRS) (50 MARKS)**			
	INDIAN CONCEPT OF MENTAL HEALTH & HEALING PRACTICES			
UNIT I	Introduction. a. History of ancient psychology b. Evolution of psychology c. Scope & method of psychology d. Concept of consciousness.			
UNIT II	**SELF & PERSONALITY** a. Upanishad views b. Geeta oneself c. Buddha's doctrine of anatma d. The naya (vaises) e. Samkhya –yoga view, vimansa view, f. personality types –trigons-(vat, pit, cough)			
UNIT III	**COGNITIVE PROCESS** a. Memory-imagination-self b. Past experiences-recall& retention memory & feeling. c. Condition for retention, recall & recognition, & forgetfulness.			
UNIT IV	**LEARNING:** a. Introduction b. Scientists of ancient India c. Ideological perspectives d. Indian philosophy e. Requisites for learning f. History of economic thought g. Kautilya's Arthashashatra h. Upanishad i. Thought & learning-Vedas (four kinds) j. Jurisprudence-meaning, importance & concept k. Indian perspective.			
UNIT V	**MOTIVATION:** a. Geeta on motives b. Distribution between non voluntary & voluntary action c. Behaviour of neonate: three kinds of action –Gautama's Nayashashtra-Rag Deves, & Moha d. Feelings & emotions- e. Geeta on feeling f. Buddhism on feeling-naya- vaises- hicaa g. Samkhya yoga h. Geeta patanjili & buddishth view on emotion.			
UNIT VI	**MENTAL HEALTH & HEALING:** a. Introduction; body mind relationship according to tantras.			

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https://www.flipkart.com/search?q=art%20therapy%20with%20diverse%20populations&otracker=search&otracker1=search&marketplace=FLIPKART&as-show=off&as=off

Gussak, D. E., & Rosal, M. L. (2016). The Wiley handbook of art therapy. Chichester, UK: John Wiley & Sons Kindle copy https://www.amazon.com/Handbook-Therapy-Clinical-Psychology-Handbooks/dp/1118306597/ref=sr_1_3?s=books&ie=UTF8&qid=1551119492&sr=1-3&keywords=gussak

FOR SECTION B

Text Books:

1. O'Donnell, A.M., Reeve, J., & Smith, J.K. (2009). Educational psychology. Hoboken, NJ: John Wiley and Sons.
2. Jena, S. P. K. (2013). *Learning disability: Theory to practice*. SAGE Publications India.
3. Mangal, S. K. (2007). Advanced Educational Psychology 2nd Edition Published by Ghosh K.

Reference Books:

1. Fetsco, T. G., & McClure, J. (2005). Educational psychology: An integrated approach to classroom decisions. Boston: Allyn & Bacon.
2. Walia, J. S. (1992). Foundation of Educational Psychology.
3. Allen K.E and Cowdery, G. E *Working with Children with Special Needs*. Online. Available at http://www.sagepub.in/upm-data/23472_Willis_Chapter_1.pdf (accessed 29 April 2015)
4. Brown, R.I. (2010). *Adult Education and Intellectual and Allied Developmental Disabilities*. In: JH Stone, M Blouin, editors. International Encyclopedia of Rehabilitation. Online: Available at http://cirrie.buffalo.edu/encyclopedia/en/article/21/. (accessed 9 March 2015)
5. UNESCO. (2009).*Teaching Children with Disabilities in Inclusive Settings*. Bangkok: UNESCO Bangkok. Online. Available at http://unesdoc.unesco.org/images/0018/001829/182975e.pdf (accessed 9 March 2015)
6. Smith, C, R (2004).5th ed. Learning Disabilities. The interaction of students and their environments. Pearson . Allyn and Bacon

	c. CBT based coping skills d. CBT based coping planning e. Narrative therapy f. Evaluation & management of following risks- suicide, violence, victimization. g. Eclectic approach & management.			

HELP READING:

Text Books

1. Kuppuswamy, B. (1990). *Elements of ancient Indian Psychology*, 3rd ed.: Konark Publishers Pvt. Ltd. New Delhi

Reference Books

2. Raghunath Safaya (1975). *Indian Psychology*, Munshiram Manoharlal Publishers Pvt. Ltd. New Delhi
3. Kuppuswamy, B. (1993). Source Book of Ancient India Psychology, Konark Publishers Pvt. Ltd. New Delhi

FOR SECTION B

Text Books:

1. Folkman, S. (2010). The Oxford handbook of stress, health, and coping. Oxford University: Oxford.
2. James, R. K. (2012). Crisis Intervention Strategies. Belmont, CA: Brooks/Cole. Block, Stanley (2010).

References:

1. Mind-Body Workbook for PTSD: A 10-Week Program for Healing After Trauma. New Harbinger Publications: CA.
2. Briere, John & Scott, Catherine (2006). Principles of Trauma Therapy: A Guide to Symptoms, Evaluation, and Treatment. Sage Publications: CA.
3. Hoff, Lee Ann; Hallisey, Bonnie; Hoff, Miracle (2009). People in Crisis: Clinical and Diversity Perspectives (6th Ed). Routledge: NY.

PAPER-8 –OPTIONAL PAPER-STUDENTS WILL CHOOSE ANY ONE

A. **CLINICAL PSYCHOLOGY**
B. **COUNSELLING PSYCHOLOGY** **(ANY ONE)**
C. **ORGANIZATIONAL BEHAVIOUR.**

	b. Psychopathology & psychotherapy c. Meditation d. Sex behaviour, religious behaviour, psycholinguistic & aesthetic.			
	SECTION B (50 HRS) (50 MARKS)			
	STRESS MANAGEMENT AND CRISIS INTERVENTION			
UNIT I	**STRESS:** concept, major sources of stress. a. Biological aspects of stress b. Module of stress (GAS) by Hens selye Relation between stress & illness			
UNIT II	**STRESS CONFLICT & CONFLICT RESOLUTION:** a. Conflict- concept, understanding about typical responses while dealing with stress b. Common styles of conflict c. Knowing about conflict resolution skills			
UNIT III	**STRESS & HANDLING BY SELF MANAGEMENT** **a.** Concept of self-care **b.** How to practice self-care **c.** Importance of personal goals **d.** Challenges about how to avoid poor self-care. **e.** Awareness **f.** Developing resilience **g.** Stress & relation between stress & supportive relationship & positive attitude **h.** Role of food and nutrition, exercise entertainment and the management of stress.			
UNIT IV	**CRISIS** a. Definition, emergency traumatic stressor b. Crisis intervention/emergency c. Historical perspective of crisis intervention d. Types of crises Types of emergencies			
UNIT V	**TRUMA UNDERSTANDING:** a. Factors responsible for trauma b. Adjustment & coping with trauma c. Scope & component of crisis event. d. Post-traumatic stress disorder (PTSD) e. Relation of trauma with health & well-being.			
UNIT VI	**PSYCHOLOGICAL BASIS OF TRAUMA & CRISIS:** a. Cognitive component b. Effective component c. Behavioural component **d.** Neurological component **e. Response related to trauma** 1. Emotional response, cognitive response, behavioural response, physical response. Ethical & professional understanding in crisis & trauma.			
UNIT VII	**INTERVENTION IN CRISIS:** a. Crisis intervention: cultural competence, evidence-based intervention b. Focused intervention			

COURSE	SECOND YEAR	T	P	C/Pr /A
PAPER-8B	**COUNSELLING PSYCHOLOGY-(100 HRS) (100 MARKS)**			
UNIT I	• Introduction • Definition of counselling & guidance • Origin & history • Aims & objectives of counselling Scope of counselling.			
UNIT II	**APPROACHES OF COUNSELLING** • Psychoanalytic & Adlerian approach • Behavioural approach • Humanistic approach (client cantered) • Existential & Gestalt approach • Rational Emotive approach • Transracial approach.			Pr
UNIT III	**PROCESS OF COUNSELLING** • Counselling process. • Stapes in basic counselling skills (listening, responding, empathy sizing, paraphrasing silence, & termination). • Stages of counselling. • Counselling process followed by counsellor • Developing & working for client & counsellor relationship. • How to prepare a client for counselling.			
UNIT IV	**FACTORS INFLUENCING COUNSELLING PROCESS** • Structure • Initiative • Settings • Client's qualities • Counsellor's qualities			
UNIT V	**COUNSELLOR/ COUNSELEE'S CHARECTERSTICS** • Client qualities • Counsellor qualities • Personality characteristics • Attitude & belief of counsellor • Emotional behaviour & attitudinal dispositional of referred hostile, counselee, & those who come on their own.			
UNIT VI	**COUNSELLING IN MEDICAL SETTINGS** • Substance abuse counselling • Counselling the terminally ill • HIV/AIDS counselling			Pr

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COURSE	SECOND YEAR	T	P	C/Pr/A
PAPER-8A	A. **CLINICAL PSYCHOLOGY (ADVANCED)-(100HRS)(100 MARKS)**			
UNIT I	**ROLE OF CLINICAL PSYCHOLOGIST** a. Introduction b. Clinical psychology as a science, as a theoretical subject, as a clinical subject. c. Its purpose for understanding, preventing & relieving psychological based distress & dysfunction.			
UNIT II	**ASSESSMENT:** a. Scope of assessment in clinical psychology. b. Psychological testing & diagnosis of mental illness. c. Scope of clinical psychology in India.			
UNIT III	**COURSES IN CLINICAL PSYCHOLOGY** a. Courses in clinical psychology and how to become a clinical psychologist. b. Clinical psychology as a carrier reference. c. The role of clinical psychologist as a researcher/ trainer/ & educationalist.			Pr
UNIT IV	**JOB OPPORTUNITY IN CLINICAL PSYCHOLOGY:** a. Efficiencies of clinical psychologist b. Scope of clinical psychology a Broad c. The psychology dilemma: in India/ a Broad. d. Clinical psychology –private practice, school & organization.			

HELP READING:

Textbooks

1. Hecker, J.E., & Thorpe, G.L. (2005). Introduction to clinical psychology: Science, practice, and ethics (Low Price Edition). Delhi: Pearson Education.
2. Pomerantz, A.M. (2008). Clinical Psychology: Science, practice, and culture. Sage Publications: New Delhi

Reference Books

1. Hersen, M., Kazdin, A.E., & Bellack, A.S. (eds.). (1991). The clinical psychology handbook (2nd ed.). New York: Pergamon Press.
2. Koocher, G.P., Norcross, J.C., & Hill III, S.S. (eds.). (1998). Psychologists' desk reference. Oxford: Oxford University Press.
3. Osborne, R.E., Lafuze, J., & Perkins, D.C. (2000). Case analysis for abnormal psychology: Learning to look beyond the symptoms. Philadelphia: Psychology Press.

REGISTRAR

COURSE	SECOND YEAR	T	P	C/Pr /A
PAPER-8C	**ORGANIZATIONAL/INDUSTRIAL PSYCHOLOGY-100 HRS (100 MARKS)**			
UNIT I	• What is an organisation? • What is an organisational psychology? • Organisational Psychology & behaviour			
UNIT II	**KEY FEATURES OF ORGANIZATION** • Organization as machine • Organization as brains • Organization as cultures • Organization as political system • Organization as prisons. • Cluck & transformation. • Instrument of domination.			1-Pr
UNIT III	**SCOPE OF ORGANIZATION PSYCHOLOGY** • Work motivation • Job satisfaction in organization • Commitment & justice • Leadership • Group behaviour • Work stress • Organizational culture & behaviour • Productive & counterproductive behaviour • Work-life balance • Organizational behaviour- level of study of organisational behaviour • a. levels of analysis-individual & organization			Case study
UNIT IV	**GOALS OF ORGANIZATIONAL BEHAVIOUR** • Description • Understanding • Prediction • Control			Case study
UNIT V	**CHARACTERSIC FIELDS OF ORGANIZATIONAL BEHAVIOUR** a. Betterment of human resources b. Contingency approach c. Multidisciplinary focus d. Organization as open system e. Organizational behaviour & cross-cultural Approach			
UNIT VI	**ORGANIZATION BEHAVIOUR IN THE INDIAN CONTENT** a. Replication b. Disenchant			

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UNIT VII	**ETHICS &COUNSELLING** • What are ethics? • Ethical principal of counselling • Main ethics: a. Counselling relationship b. Confidentiality c. Professional responsibility d. Relationship with other professionals e. Evaluation & interpretation f. Supervision & teaching strategies. g. Research & publication h. Resolving ethical issues.			

HELP READING:

Text Books:

1. Blocher, DH; (1966) *Developmental Counseling*, New York, The Ronald Press.
2. Narayana Rao, (1991) *Counseling and Guidance*, Tata McGraw Hill Publishing Company.

References

1. Carkuff, RR, and B.G. Bernson: (1974) *Beyond counseling and Psychotherapy*, New York, Holt, Rinehart and Winston.
2. Fruster, J.M.: *Psychological Counseling in India*, Mumbai McMillan.
3. Paterson: (1989) *Theories of Counseling and Psychotherapy*, Harper.

	c. Importance d. Nature of people-individual differences **e.** People as a whole **f.** Motivated behaviour **g.** Value of the person (human dignity) h. Nature of organization-social system, psychological system i. Types of organization			
UNIT VII	**ORGANIZATION PARADIGM SHIFT** a. Introduction b. Organizational output **c.** Holistic organizational behaviour.			
UNIT VIII	**MODELS OF ORGANIZATION** a. The autocratic model b. Custodial model c. Supportive model d. Collegial model e. Comparison of the model of organizational behaviour f. Conclusion about models: a. Models- importance and subjective evolutionary changes b. Model based on incremental values c. Models-function of prevailing employee d. The contingent use of all models.			Pr-1

HELP READING:

Text Books

1. Jex, S.M. (2002). Organisational psychology: A scientist-practitioner approach. New York:
2. John Wiley. Rollinson, D. & Broadfield, D. (2002). Organisational behaviour and analysis: An integrated approach, 2nd Ed. New York: Prentice-Hall
3. Greenberg, J. & Baron, R.A. (2003). Behaviour in Organisations: Understanding and managing the human side of work, 8th Ed. New Delhi: Prentice Hall of India
4. Robbins, S.P., Judge, T.A., & Sanghi, S. (2009). Organisational Behaviour, 13th Ed. New Delhi: Pearson-Prentice Hall.
5. Sinha, J.B.P. (2008). Culture and organisational behaviour. New Delhi: Sage.
6. Davis, K. D. & Newstrom, J. W. (1989). Human behaviour at work: Organisational Behaviour, 8th Ed. New Delhi: McGraw-Hill.
7. Mullins, L. J. (2005). Management and organisational behaviour, 7th Ed. New Delhi: Prentice Hall

8. Rode, J. C. (2004). Job satisfaction and life satisfaction revisited: A longitudinal test of an integrated model. Human Relations, 57, 1205-1229
9. Sinha, J.B.P. (1985). The psychic relevance of work in Indian culture. Dynamic Psychiatry, 18, 134-141

Reference Books

1. Smither, R.D. (1988). The psychology of human and work performance. New York: Haper & Row. Taylor, F. (1911). Principles of scientific management. New York: Harper

2. Brayfield, A. H., & Rothe, H. F. (1951). An index of job satisfaction. Journal of Applied Psychology, 35, 307–311.

3. Bruce, W.M., Blackburn, J.W. (1992), Balancing Job Satisfaction and Performance: A Guide for Human Resource Professionals. Connecticut, CT: Quorum Books

4. Roe, A. (1956). The Psychology of Occupations. New York: John Wiley Sons, Skinner, B. F. (1953). Science and Human Behaviour. New York: Free Press.

MINUTES OF THE 40th ACADEMIC COUNCIL HELD ON 09.10.2020 AT 3:00 IN THE MAHARAJA HALL, SANTOSH MEDICAL COLLEGE, GHAZIABAD, NCR DELHI.

****

The Members of the Academic Council who were present in the Meeting the Attendance list is attached in this regard.

At the outset, the Vice Chancellor Dr. Tripta S Bhagat, welcomed all the members of the Academic Council.

The following Agenda Items were taken up for discussion:

Item: 1

CONFIRMATION OF THE MINUTES OF 39th MEETING OF THE ACADEMIC COUNCIL HELD ON 07.08.2020 AT 03.00 PM.

The Minutes of 39th meeting of the Academic Council held on 07.08.2020 at 3.00 PM were circulated to all members of Academic Council for their information and comments, if any. No comments were received; hence, the Minutes **were confirmed**.

Item: 2

ACTION TAKEN ON THE MINUTES OF 39th MEETING OF THE ACADEMIC COUNCIL HELD ON 07.08.2020 AT 03.00 PM.

The Action Taken on the Minutes of 39th meeting of the Academic Council held on 07.08.2020 at 3.00 PM **were noted** by the Members of the Academic Council.

ITEM: 3

TO CONSIDER THE MINUTES/ RECOMMENDATIONS OF THE 48th MEETING OF THE BOARD OF STUDIES HELD ON 07.10.2020 AT 11:00 AM.

The Members of the Academic Council considered in detail the **recommendations / minutes** along with **AGENDA** of the Board of Studies held on 07.10.2020 at 11.00 AM and **approved** as under as :-

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8. Course Methodology

To train medical professionals with required qualification in the concerned specialty.

9. Course Syllabus

- Whole Blood Collection, In-house as well as voluntary blood donation camp, blood donor counseling, blood component separation, TTI (Transfusion transmitted Infection), testing of the collected blood units, Blood grouping and cross matching, therapeutic phlebotomy for the patients having high Hb, IAT (Indirect Antiglobulin Testing) and DAT (Direct Antiglobulin Testing).

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(18) TO CONSIDER TO START A FELLOWSHIP PROGRAMME ON "PEDIATRIC PULMONOLOGY" IN THE DEPARTMENT OF PAEDIATRICS, SANTOSH MEDICAL COLLEGE & HOSPITAL, GHAZIABAD, NCR DELHI.

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The members of the Academic Council after consideration the **minutes / recommendations** of the **Board of Studies** to start a fellowship programme in **"Pediatric Pulmonology"** in the Department of **Paediatrics** and **approved** the same as under: -

1. Name of the Programme

Fellowship Program on "Pediatric Pulmonology"

2. Duration of the Programme

One Year

3. Eligibility Criteria

M.D Pediatrics Qualified

4. Intake

2 students per session

5. Course Schedule

Theory lectures and clinical posting /hands-on twice every week.

6. Course Fees

Rs.1,00,000 per candidate.

7. Course Director

Dr Mandeep Walia, Associate Professor, Department of Pediatrics

8. Course Methodology

Respiratory diseases constitute a significant burden of morbidity and mortality in India. The spectrum of childhood respiratory diseases in India has undergone considerable expansion over the past few decades. From a situation where infectious conditions of upper and lower respiratory tract predominated, there is currently a wide range of problems including congenital malformations, allergic conditions such as asthma & allergic rhinosinusitis, Tuberculosis & drug resistant TB, Bronchiectasis, genetic disorders like cystic fibrosis, primary ciliary disorders that are now recognized to be prevalent in the country in significant proportions.

A three-year postgraduate (MD) degree in pediatrics lends adequate exposure and skills to train a doctor in managing multitudes of pediatric diseases including respiratory. However, with a growing expanse in medical knowledge and recognition of many complex and chronic respiratory diseases that demand a more detailed and extensive clinical and investigative approach, which often is beyond the scope of postgraduation training

A super specialty program in the form of a fellowship training in pediatric pulmonology envisages to fulfil the felt need to build capacity in the country of specialists that have specialized training to recognize and provide a comprehensive care for children with complex, chronic respiratory morbidities

9. Course Syllabus

❖ SPECIFIC AIMS OF THE FELLOWSHIP PROGRAM

The Fellow must acquire an in-depth understanding of:

1. Normal lung growth, development and anatomy at both the macroscopic and microscopic level.
2. Normal lung physiologic functions.
3. Epidemiologic, clinical, and laboratory approach to the diagnosis of (congenital, and acquired, infective and non- infective disorders) pulmonary, airway and pulmonary vascular diseases of the pediatric age group.
4. To perform and interpret clinically relevant pulmonary investigations: Spirometry, ABG, Flexible Bronchoscopy, FeNO, Sweat Chloride testing, Overnight Oximetry
5. In-depth understanding and Interpretation of diagnostic Lung and Airway Imaging: Xray Chest, Chest CT Scan, Lung Ultrasound.
6. Medical and surgical therapeutic management and complications of the pulmonary disorders seen in the pediatric age group.
7. Participation and conducting research in pediatric respiratory disorders.

A. Outpatient Clinical Services

a. Pediatric Chest Clinic at Santosh Medical College hospital, Ghaziabad.

b. Child Development Clinic

B. Inpatient Clinical Services at Santosh Medical College hospital.

a. Pediatric wards for inpatient pediatric pulmonology consultations.

b. Pediatric Intensive care unit (PICU)

c. Neonatal Intensive care unit (NICU)

d. Pediatric Emergency unit

C. Laboratory & Diagnostic Services

a. Pediatric Respiratory Laboratory- Spirometry, FeNO, sweat chloride test, overnight oximetry
b. Pediatric Flexible Bronchoscopy Laboratory

c. Pediatric Radiology Services

- **TEACHING ACTIVITIES-** Fellows will participate in both intradepartmental & interdepartmental teaching programs during the training period

1. Clinical case presentation
2. Seminars/focused reviews
3. Journal Club
4. Intradepartmental Clinical Grand Rounds
5. Mortality meetings
6. Pediatric Pulmonary Clinico- Radiology Meets
7. Attend atleast one National Pediatric Respiratory Conference. Encourage participation in regional pediatric pulmonary CMEs/conferences..
8. Collaborative clinical meetings with other Pediatric Pulmonology units of the country & abroad.

- **RESEARCH ACTIVITIES**: Fellows would be encouraged to undertake independent research projects in pediatric pulmonology and also actively associate with the ongoing research activities. He/she would be expected to publish the results of his/her research in journals of repute.

- Internal Assessment- ... rotations through Logbook of activities and ... by Incharges of the different divisions/units that the fellow will rotate through.
b. Exit Exam- pass percentage will be 60% of the total.

   ☐ Theory exam- including Long & short Essay type questions

   ☐ Practical exam- One Long case & one short case, Viva, Radiology & investigations viva.

FELLOWSHIP PROGRAM FACULTY

1. CORE FACULTY

a. **Fellowship Director- Dr Mandeep Walia,** Associate Professor, Department of Pediatrics, Santosh Deemed to be University, Ghaziabad, Delhi-NCR.

Dr. Mandeep Walia is trained in pediatric pulmonology from AIIMS-New Delhi and has done fellowship in Pediatric Respirology, BC Children's Hospital, University of British Columbia, Vancouver, Canada. She has more than 12 years of experience as a pediatric faculty with adjunct role as a pediatric pulmonologist at several premier medical institutes of the country. She has performed more than 400 Flexible bronchoscopies in pediatric and neonatal patients. She has a vast experience in managing complex and chronic pediatric respiratory diseases of children and in running pediatric pulmonology services in these institutes.

b. **Dr Alka Aggrawal**, Professor & Head, Department of Pediatrics, Santosh Deemed to be University, Ghaziabad, Delhi-NCR. Dr Alka Aggrawal is also incharge of the Child Development Clinic at Santosh Hospital.

- **INTER-DEPARTMENT FACULTY**- Faculty from the departments of Pediatric Surgery, Pathology, Radiology, Laboratory Medicine, ENT will be involved.

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(19) TO CONSIDER TO START A FELLOWSHIP PROGRAMME ON "EMG & NCS" IN THE DEPARTMENT OF PHYSIOLOGY, SANTOSH MEDICAL COLLEGE & HOSPITAL, GHAZIABAD, NCR DELHI.

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The members of the Academic Council after consideration the **minutes / recommendations** of the **Board of Studies** to start a fellowship programme in **"EMG & NCS"** in the department of **Physiology** and **approved** the same as under: -

1. **Name of the Course**
   Fellowship Program on "EMG & NCS,"
2. **Duration of the Course**
   6 months
3. **Eligibility Criteria**
   DM / DNB Neurology, DM/ DNB Paediatric Neurology, MD/ DNB in Psychiatry, MD/ DNB in Paediatrics
4. **Intake**
   2 students per session
5. **Course Schedule**
   Theory lectures and practical /hands-on twice every week.
6. **Course Fees**
   Rs.10,000 per student face to face course.
   Rs.5,000/- online
7. **Course Director**
   Dr Rinku Garg, Professor & HOD, Department of Physiology
8. **Course Methodology**

   To train a medical professional with a postgraduate qualification in the concerned specialty, Clinical Neurophysiology

9. **Course Syllabus**

   Physiology of electrical potentials with special regards to bio-signals like EEG & NCS. Ability to perform recording of all of the signals from a human subject having expertise in setting up equipment and recording and analysis of signals.

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(20) TO CONSIDER TO START A FELLOWSHIP PROGRAMME ON "ENDO-UROLOGY [FIEU]" IN THE DEPARTMENT OF SURGERY, SANTOSH MEDICAL COLLEGE & HOSPITAL, GHAZIABAD, NCR DELHI.

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The members of the Academic Council after consideration the **minutes / recommendations** of the **Board of Studies** to start a fellowship programme in **"Endo-Urology [FIEU]"** in the Department of **Surgery** and **approved** the same as under: -

1. **Name of the Programme**
   Fellowship Program on "Endo-Urology [FIEU]"
2. **Duration of the Programme**
   One Year
3. **Eligibility Criteria**
   Qualified M.S. / DNB General Surgery
4. **Intake**
   1 student per year