Chapter III

M. D. General Medicine

Goal:

The postgraduate education is intended to produce a well informed, well trained doctor in medicine who is able to take care of patients, understand the essence of modern medicine, scrutinise the published literature while maintaining acceptable standards in discipline. It is expected that during to tenure of the course he develops optimum communication skills. The postgraduate education exposes the student to not only to Internal medicine, but also to other well established departments and sub specialities and allied subjects. The staff of all these departments will be involved in the PG programme. A well-motivated and monitored student is the key to the success of this programme.

The clinical rotation is intended to provide opportunity to post graduate student (PG) to the patient care and hands on experience. He/She is expected to acquire skills to be competent clinician in General Medicine. Most importantly, learn to formulate diagnosis, plan diagnostic procedures / investigations and plan rational therapy. Meticulous documentation of patients medical record by PG is encouraged. During this time PG is encouraged to learn the art of lengthy as well as brief presentations.

The PG is rotated through the subspeciality departments during second year of the three years course. This roster is provided to PGs at the entry to the course. One faculty member should be selected by the department and he/she should act as friend, guide, counselor and philosopher for PG throughout the training course.

The medical post graduate after completion of MD (Gen. Med.) should be able to manage patient independently as a specialist. He should be able to plan and carry out research activity in the field of General Medicine. He should be able to teach under graduate medical student subject of General Medicine.

)bjectives:

The following objectives are laid out to achieve the goals of the course. These bjectives are to be achieved by the time the candidate completes the course. The)bjectives may be considered under the subheadings

. Knowledge (Cognitive domain)

. Skills (Psycho motor domain)

. *Human values, Ethical practice and Communication abilities*

Knowledge:

- Describe aetoiology, pathophysiology, principles of diagnosis and management of common problems including emergencies, in adults and children.
- Describe indications and methods for fluid and electrolyte replacement therapy including blood transfusion
- Describe common malignancies in the country and their management including prevention
- Demonstrate understanding of basic sciences relevant to this speciality
- Identify social, economic, environmental and emotional determinants in a given case, and take them into account for planning therapeutic measures.
- Recognize conditions that may be outside the area of his specialty/competence and to refer them to the proper specialist.
- Advise regarding the operative or non-operative management of the case and to carry out this management effectively.
- Update oneself by self-study and by attending courses, conferences and seminars relevant to the speciality.
- Teach and guide his team, colleagues and other students.
- Undertake audit, use information technology tools and carry out research, both basic and clinical, with the aim of publishing his work and presenting his work at various scientific fora.

Skills

- Take a proper clinical history, examine the patient, perform essential diagnostic procedures and order relevant tests and interpret them to come to a reasonable diagnosis about the surgical condition.
- Perform common procedures relevant to the specialitay.
- Provide basic and advanced life saving support services (BLS) in emergency situations
- Undertake complete monitoring of the patient.

Human values, Ethical practice and Communication abilities

- Adopt ethical principles in all aspects of his/her practice. Professional honesty and integrity are to be fostered. Care is to be delivered irrespective of the social status, caste, creed or religion of the patient.
- Develop communication skills, in particular the skill to explain various options available in management and to obtain a true informed consent from the patient.
- Provide leadership and get the best out of his team in a congenial working atmosphere.
- Apply high moral and ethical standards while carrying out human or animal research.
- Be humble and accept the limitations in his knowledge and skill and to ask for help from colleagues when needed.
- Respect patient's rights and privileges including patient's right to information and right to seek a second opinion.

The goal is to provide learning opportunities for acquisition of knowledge, human values and skills that may enable to diagnose and treat relevant diseases and disorders as a specialist.

Course Contents:

Theory:

INTRODUCTION TO CLINICAL MEDICINE: The practice of medicine – ethical issues in clinical medicine – quantitative aspects of clinical reasoning – host and disease: influence of demographic and socioeconomic factors – influence of environmental and occupational hazards on disease – women's health – medical disorders during pregnancy – adolescent health problems – geriatric medicine – principles of disease prevention – cost awareness in medicine.

CARDINAL MANIFESTATIONS AND PRESENTATION OF DISEASES: PAIN – pathophysiology and management – chest discomfort and palpitation – abdominal pain – headache – back and neck pain *ALTERATIONS IN BODY TEMPERATURE: fever and hyperthermia – fever and rash – hypothermia *NERVOUS SYSTEM DYSFUNCTION: faintness, syncope, dizziness, and vertigo – weakness, abnormal movements, and imbalance – episodic muscle spasms, cramps and weakness – numbness, tingling and sensory loss – acute confusional states and coma – aphasia and other focal cerebral disorders – memory loss and dementia disorders of sleep and circadian rhythms.

DISORDERS OF THE EYES, EARS, NOSE AND THROAT – disorders of the eye disorders of smell, taste and hearing – infections of the upper respiratory tract- oral manifestations of disease.

ALTERATIONS IN CIRCULATORY AND RESPIRATORY FUNCTIONS – dyspnea and pulmonary edema – cough and hemoptysis – approach to the patient with a heart murmur – approach to the patient with hypertension – hypoxia, polycythemia and cyanosis – edema – shock – cardiovascular collapse, cardiac arrest, and sudden cardiac death.

ALTERATIONS IN GASTROINTESTINAL FUNCTION – dysphagia, nausea, vomiting and indigestion – diarrhea and constipation – gain and loss in weight – gastrointestinal bleeding – jaundice – abdominal swelling, ascites.

ALTERATIONS IN URINARY FUNCTION AND ELECTROLYTES – cardinal manifestations of renal disease – voiding dysfunction, incontinence, and bladder pain – fluid and electrolyte disturbances – acidosis and alkalosis.

ALTERATIONS IN THE UROGENITAL TRACT – impotence – disturbances of menstruation and other common gynecologic complaints in women – hirsutism and virilization.

ALTERATION IN THE SKIN – approach to the patient with skin disorders – eczema, psoriasis, cutaneous infections, acne, and other common skin disorders – cutaneous drug reactions – skin manifestations of internal disease – photosensitivity and other reactions to light.

Hematological alterations – anemia – bleeding and thrombosis – enlargement of lymph nodes and spleen – disorders of granulocytes and monocytes.

MANIFESTATIONS OF CANCER – presentations of the patient with cancer: solid tumors in adults-evaluation of breast masses in men and women.

GENETICS AND DISEASE – genetics and disease – cytogenetic aspects of human disease – treatment and prevention of genetic disease.

CLINICAL PHARMACOLOGY – principles of drug therapy – adverse reactions to drugs – physiology and pharmacology of the autonomic nervous system – nitric oxide biologic and medical implications.

NUTRITION – nutrition and nutritional requirements – assessment of nutritional status – protein and energy malnutrition – obesity – anorexia nervosa and bulimia nervosa – diet therapy – enteral and parenteral nutrition therapy – vitamin deficiency and excess – disturbances in trace elements.

ONCOLOGY AND HEMATOLOGY NEOPLASTIC DISORDER – approach to the patient with cancer – prevention and early detection of cancer – cell biology of cancer – cancer genetics – invasion and metastasis – principles of cancer therapy – infections in patients with cancer – melanoma and other skin cancers-head and neck cancer – neoplasms of the lung – breast cancer – gastrointestinal tract cancer – tumors of the liver and biliary tract – pancreatic cancer - endocrine tumors of the gastrointestinal tract and pancreas – bladder and renal cell cancer – hyperplasia and carcinoma of the prostate – testicular cancer – gynecologic malignancies – sarcomas of soft tissue and bone – metastatic cancer of unknown primary site – paraneoplastic syndromes – paraneoplastic neurologic syndromes – oncologic emergencies.

DISORDERS OF HEMATOPOIESIS – hematopoiesis – iron deficiency and other hypoproliferative anemias disorders of hemoglobin – megaloblastic anemias – hemolytic anemias and acute blood loss – aplastic anemia and myelodysplasia – polycythehmia vera and other myloproliferative diseases – acute and chronic myeloid leukemias – malignancies of lymphoid cells- plasma cell disorders transfusion biology and therapy – bone marrow transplantation.

DISORDERS OF HEMOSTASIS – disorders of the platelet and vessel wall – disorders of coagulation and thrombosis – anticoagulant, fibrinolytic, and antiplatelet therapy.

INFECTIOUS DISEASES – BASIC CONSIDERATIONS IN INFECTIOUS DISEASES – Introduction to infectious diseases: host parasite interaction – laboratory diagnosis of infectious diseases – immunization principles and vaccine use – health risks to travellers *CLINICAL SYNDROMES – COMMUNITY ACQUIRED – sepsis and septic shock – fever of unknown origin – infective endo carditis – intraabdominal infections and abscesses – acute infectious diarrhoeal diseases and bacterial food poisoning – sexually transmitted diseases: overview and clinical approach – pelvic inflammatory disease – urinary tract infections and pyelonephritis – osteomyelitis – infections of the skin, muscle, and soft tissues – infections (excluding AIDs) in injection drug users – infections from bites scratches and burns *CLINICAL SYNDROMES – NOSOCOMIAL INFECTIONS infections in transplant recipients – hospital – acquired and intravascular device – related infections – infection control in the hospital *BACTERIAL DISEASES: general considerations – molecular – mechanisms of bacterial pathogenesis – treatment and prophylaxis of bacterial infections *DISEASES CAUSED BY GRAM-POSITIVE BACTERIA – pneumococcal infections – staphylococcal infections – streptococcal and enterococcal infections – diphtheria, other corynebacterial infections, and anthrax – infections caused by listeria monocytogenes – tetanus – botulism – gas gangrene, antibiotic – associated colitis, and other clostridial infections *DISEASES CAUSED BY GRAM – NEGATIVE BACTERIA – meningococcal infections – gonococcal infections – moraxella (branchamella) catarrhalis other moraxella species and kingella – infections due to heamophilus influenzae, other haemophilus species, the hacek group, and other gram – negative bacilli – legionella infection – pertussis diseases caused by gram – negative enteric bacilli – helicobacter infections – infections due to pseudomonas species and related organisms – salmonellosis – shigellosis- infections due to campylobacter and related species – cholera and other vibrios - rucellosis – tularemia – plague and other yersinia infections – bartonella infections, including cat – scratch disease – Donovanosis (ganuloma inguinale)

*MISCELLANEOUS BACTERIAL INFECTIONS – nocardiosis – actinomycosis – infections due to mixed anaerobic organisms *MYCOBACTERIAL DISEASES – antimycobacterial agents – tuberculosis – leprosy (hansen's disease) – infections due to nontuberculous myco bacteria *SPIROCHAETAL DISEASES – syphilis – endemic treponematoses – leptosprirosis – relapsing fever – lyme borreliosis *RICKETTSIA, MYCOPLASMA AND CHLAMYDIA – rickettsial diseases – mycoplasma infections – chlamydial infections *VIRAL DISEASES – medical virology – antiviral chemotherapy *DNA VIRUSES – herpes simplex viruses – varicella – zoster virus infections – epsteinbarr virus infections, including infectious mononucleosis – cytomegalovirus and human herpesvirus types 6, 7 and 8 – smallpox, vaccinia and other poxviruses – parvovirus – human papillomavirus infections *DNA AND RNA RESPIRATORY VIRUSES – common viral respiratory infections *RNA VIRUSES – the human retroviuses – influenza – viral gastroenteritis – enteroviruses and reoviruses – measles (rubeola) – rubella (german measles) – mumps – rabies virus and other rhabdoviruses –

infections caused by arthropod and rodent – borne viruses – marburg and ebola viruses (filoviridae) *FUNGAL INFECTIONS – diagnosis and treatment of fungal infections – histoplasmosis – coccidioidomycosis – blastomycosis – cryptococcosis candidiasis – aspergillosis – mucormycosis – miscellaneous mycoses and prothotheca infections – pneumocystis carini infection *PROTOZOAL AND HELMINTHIC INFECTIONS: general considerations – approach to the patient with parasitic infections – laboratory diagnosis of parasitic infections – therapy for parasitic infections *PROTOZOAL INFECTIONS – amoebiasis and infection with free – living amoebas – malaria and other diseases caused by red blood cell parasites leishmaniasis – trypanosomiasis – toxoplasma infection – protozoal intestinal infections and trichomoniasis *HELMINTHIC INFECTIONS – trichinosis and infections with other tissue nematodes – intestinal nematodes – filariasis and related infections (loiasis, onchocericiasis, and dracunculaiasis) – schistosomiasis and other trematode infections – cestodes.

DISORDERS OF THE CARDIOVASCULAR SYSTEM – DIAGNOSIS – approach to the patient with heart disease – physical examination of the cardio vascular system – electrocardiography – diagnostic cardiac catheterization and angiography DISORDERS OF RYHTM – the bradyarrhythmias: disorders of sinus node function and av conduction disturbances – the tachyarrhythmias *DISORDERS OF THE HEART – normal and abnormal myocardial function – heart failure – cardiac transplantation congenital heart disease in the adult – rheumatic fever – valvular heart disease – corpulmonale – the cardiomyopathies and myocarditis – pericardial disease – cardiac tumors, cardiac manifestations of sytemic diseases, and traumatic cardiac injury *VASCULAR DISEASE – atherosclerosis – acute myocardial infarction – ischemic heart disease – coronary angioplasty and other therapeutic applications of cardiac catheterization – hypertensive vascular disease – diseases of the aorta – vascular diseases of the extremities.

DISORDERS OF THE RESPIRATORY SYSTEM - *DIAGNOSIS –approach to the patient with disease of the respiratory system – disturbances of respiratory system – disturbances of respiratory function – diagnostic procedures in respiratory disease *DISEASE OF THE RESPIRATORY SYSTEM – asthma – hypersensivity pneumonitis and eosinophilic pneumonias – environmental lung diseases – pneumonia, including narcotizing pulmonary infections (lung abscess bronchiectasis – cystic fibrosis – chronic bronchitis, emphysema, and airway obstruction – interstitial lung diseases – primary pulmonary hypertension pulmonary thromboembolism – disorders of the pleura, mediastinum and diaphragm – disorders of ventilation – sleep apnea – acute respiratory distress syndrome – mechanical ventilatory support Lung transplantation.

DISORDERS OF THE KIDNEY AND URINARY TRACT – approach to the patient with diseases of the kidneys and urinary tract – disturbances of renal function – acute renal failure chronic renal failure – dialysis and transplantation in the treatment of renal failure – pathogenetic mechanisms of glomerular injury – the major glomerulopathies –

glomerulopathies associated with multisystem diseases. Tubulointerstitial diseases of the kidney – vascular injury to the kidney – hereditary tubular disorders – nephrolithiasis – urinary tract obstruction.

DISORDERS OF THE GASTROINTESTINAL SYSTEM – DISORDERS OF THE ALIMENTARY TRACT – approach to the patient with gastrointestinal disease – gastrointestinal endoscopy – diseases of the esophagus – peptic ulcer and related disorders – disorders of absorption – inflammatory bowel disease: ulcerative colitis and crohn's disease – irritiable bowel syndrome – diverticular, vascular, and other disorders of the intestine and peritoneum – acute intestinal obstruction – acute appendicitis *LIVER AND BILIARY TRACT DISEASE – approach to the patient with liver disease – evaluation of liver function – derangements of hepatic metabolism – bilirubin metabolism and hyperbilirubinemia – acute viral hepatitis – toxic and drug – induced hepatitis – chronic hepatitis – cirrhosis and alcoholic liver disease – major complications of cirrhosis – infiltrative and metabolic diseases affecting the liver – liver transplantation – diseases of the gallbladder and bile ducts *DISORDERS OF THE PANCREAS – approach to the patient with pancreatic disease – acute and chronic pancreatitis. DISORDERS OF THE IMMUNE SYSTEM, CONNECTIVE TISSUE, AND JOINTS *DISORDERS OF THE IMMUNE SYSTEM – introduction to the immune system – the major histocompatibility gene complex – primary immune deficiency disease – human immunodeficiency virus (HIV) disease: aids and related disorders – amyloidosis *DISORDERS OF IMMUNE – MEDIATED INJURY – diseases of immediate type hypersensitivity – immunologically mediated skin diseases – systemic lupus erythematosus – rheumatoid arthritis – systemic sclerosis (seleroderma) dermatomyositis and poly myositis – Sjogren's syndrome – ankylosing spondylitis, reactive arthritis and undifferentiated spondyloarthropathy – Behcet's syndrome – the vasculitis syndromes – sarcoidosis. *DISORDERS OF THE JOINTS – approach to articular and musculoskeletal disorders – osteoarthritis – arthritis due to deposition of calcium crystals – infectious arthritis – psoriatic arthritis and arthritis associated with gastrointestinal disease – relapsing polychondritis and other arthritides.

ENDOCRINOLOGY AND METABOLISM - *ENDOCRINOLOGY – approach to the patient with endocrine and metabolic disorders – neuroendocrine regulation and diseases of the anterior pituitary and hypothalamus – disorders of growth – disorders of the neurohypophysis – diseases of the thyroid – diseases of the adrenal cortex – pheochromocytoma – diabetes mellitus – hypoglycemia – disorders of the testes – disorders of the ovary and female reproductive tract – endocrine disorders of the breast – disorders of sexual differentiation – disorders affecting multiple endocrine systems *DISORDERS OF INTERMEDIARY METABOLISM – disorders of lipoprotein metabolism – hemochromatosis – the porphyries – gout and other disorders of Purina metabolism – Wilson's disease – lysosomal storage diseases – glycogen storage diseases – inherited disorders of connective tissue – inherited disorders of amino acid metabolism and storage – inherited defects of membrane transport – galactosemia,

galactokinase deficiency and other rare disorders of carbohydrate metabolism – the lipodystrophies and other rare disorders of adipose tissue *DISORDERS OF BONE AND MINERAL METABOLISM – calcium, phosphorus, and bone metabolism: calcium – regulating hormones – diseases of the parathyroid glands and other hyper - and hypolcalcemic disorders – metabolic bone disease – disorders of phosphorus metabolism – disorders of magnesium metabolism – Paget's disease of bone. Hyperostosis, fibrous dysplasia, and other dysplasia of bone and cartilage.

NEUROLOGIC DISORDERS - *DIAGNOSIS OF NEUROLOGIC DISORDERS – approach to the patient with neurologic disease – electrophysiologic studies of the central and peripheral nervous systems – neuroimaging in neurologic disorders – molecular diagnosis of neurologic disorders *DISEASES OF THE CENTRAL NERVOUS SYSTEM – migraine and the cluster headache syndrome – seizures and epilepsy – alzheimer's disease and other primary dementias – parkinson's disease and other extrapyramidal disorders – ataxic disorders – the motor neuron diseases – disorders of the autonomic nervous system – disorders of the cranial nerves – diseases of the spinal cord. Traumatic injuries of the head and spine tumors of the nervous system – multiples sclerosis and other demyelinating diseases – bacterial meningitis, brain abscess, and other suppurative intracranial infections – chronic and recurrent meningitis - aseptic meningitis, viral encephalitis, and prion diseases – nutritional and metabolic diseases of the nervous system *DISORDERS OF THE NERVE AND MUSCLE – diseases of the peripheral nervous system – myasthenia gravis and other diseases of the neuromuscular junction – diseases of muscle *CHRONIC FATIGUE SYNDROME – chronic fatigue syndrome *PSYCHIATRIC DISORDERS – mental disorders *ALCOHOLISM AND DRUG DEPENDENCY – alcohol and alcoholism – opioid drug abuse and dependence – cocaine and other commonly abused drugs – nicotine addiction.

ENVIRONMENTAL AND OCCUPATIONAL HAZARDS – specific environmental and occupational hazards *ILLNESSES DUE TO POISONS, DRUG OVERDOSAGE AND ENVENOMATION –poisoning and drug overdosage – disorders caused by reptile bites and marine animal envenomations – ectorparasite infestations and arthropod bites and stings *SPECIFIC ENVIRONMENTAL AND OCCUPATIONAL HAZARDS – drowning and near. Drowning – electrical injuries – radiation injury – heavy metal poisoning.

Teaching and Learning Activities

A candidate pursuing the course should work in the institution as a full time student. No candidate should be permitted to run a clinic/laboratory/nursing home while studying postgraduate course. Each year should be taken as a unit for the purpose of calculating attendance.

Every student shall attend teaching and learning activities during each year as prescribed by the department and not absent himself / herself from work without valid reasons.

A list of teaching and learning activities designed to facilitate students acquire essential knowledge and skills outlined is given below:

1. *Lectures* : Lectures are to be kept to a minimum. They may, however, be employed for teaching certain topics. Lectures may be didactic or integrated.

   a) *Didactic Lectures*: Recommended for selected common topics for post graduate students of all specialties. Few topics are suggested as examples:

      1) Bio-statistics
      2) Use of library,
      3) Research Methods
      4) Medical code of Conduct and Medical Ethics
      5) National Health and Disease Control Programmes
      6) Communication Skills etc.

   These topics may preferably taken up in the first few weeks of the 1st year.

b) *Integrated Lectures*: These are recommended to be taken by multidisciplinary teams for selected topics, eg. Jaundice, Diabetes mellitus, Thyroid etc.

2. *Journal Club* : Recommended to be held once a week. All the PG students are expected to attend and actively participate in discussion and enter in the Log Book relevant details. Further, every candidate must make a presentation from the allotted journal(s), selected articles at least four times a year and a total of 12 seminar presentations in three years. The presentations would be evaluated using check lists and would carry weightage for internal assessment (See Checklist in Chapter IV). A time table with names of the student and the moderator should be announced at the beginning of every year.

3. *Subject Seminar*: Recommended to be held once a week. All the PG students are expected to attend and actively participate in discussion and enter in the Log Book relevant details. Further, every candidate must present on selected topics at least four times a year and a total of 12 seminar presentations in three years. The presentations would be evaluated using check lists and would carry weightage for internal assessment (See Checklist in Chapter IV). A timetable for the subject with names of the student and the moderator should be scheduled at the beginning of every year.

4. *Student Symposium*: Recommended as an optional multi disciplinary programme. The evaluation may be similar to that described for subject seminar.

5. *Ward Rounds*: Ward rounds may be service or teaching rounds.
   a) Service Rounds: Postgraduate students and Interns should do every day for the care of the patients. Newly admitted patients should be worked up by the PGs and presented to the seniors the following day.

   b) Teaching Rounds : Every unit should have 'grand rounds' for teaching purpose. A diary should be maintained for day to day activities by the students.
   Entries of (a) and (b) should be made in the Log book.

6. *Clinico-Pathological Conference*: Recommended once a month for all post graduate students. Presentation be done by rotation. If cases are not available due to lack of clinical postmortems, it could be supplemented by published CPCs.

7. *Inter Departmental Meetings*: Strongly recommended particularly with departments of Pathology and Radio-Diagnosis at least once a week. These meetings should be attended by post graduate students and relevant entries must be made in the Log Book.

   Pathology: A dozen interesting cases may be chosen and presented by the post graduate students and discussed by them as well as the senior staff of Medicine department. The staff of Pathology department would then show the slides and present final diagnosis. In these sessions the advance immuno-histo-chemical techniques, the burgeoning markers other recent developments can be discussed.

   Radio-diagnosis: Interesting cases and the imaging modalities should be discussed.

8. *Teaching Skills* : Post graduate students must teach under graduate students (Eg. medical, nursing) by taking demonstrations, bed side clinics, tutorials, lectures etc. Assessment is made using a checklist by surgery faculty as well students. (See model check list in Chapter IV). Record of their participation be kept in Log book. Training of post graduate students in Educational Science and Technology is recommended.

9. *Continuing Medical Education Programmes (CME)* : Recommended that at least 2 state level CME programmes should be attended by each student in 3 years.

10. Conferences: Attending conferences is optional. However it is encouraged.

Method of Training:

Emphasis is on hospital training with candidates given graded responsibility in the management and treatment of patients entrusted to them, while rotating in General medicine units and of subspecialty units. PG also attend respective units outpatient and inpatient activities and consultations.

Didactic lecture and demonstrations by basic and clinical departments to orient all new post graduate house staff to various departmental services and introduce basic concept of acute care management of medical / surgical emergencies. Involving Laboratory, Radiology, Blood bank services Also orientation to medical records and library facility. Lectures are organised over a period of two months and serve as introduction to all new post graduates to promote the need for integrated approach between various disciplines. Preferably these should be organized between 8-9 AM / 3-4 PM to minimise interference with the working of parent departments.

Special orientation to bio statistics, research methodology, legal medicine and computer skills should be organised through lectures for all first year post graduates during first six months.

Clinical seminar once a week involving participation of all staff of the department of Medicine to ensure combined staff moderated teaching.

Bedside clinics once a week involving one individual senior Professor or Associate Professor or Specialist.

Hospital conference once in fortnight involving multidisciplinary approach. Case selection to be done by senior faculty members to emphasize current diagnostic – therapeutic advances.

Journal club once a week 3-4 Journals by P.G's and Junior faculty under supervision of Senior faculty.

Subject seminar once a week Topics to be selected carefully and should not be repeated unnecessarily within 2 years (Total period of PG training is 3 years).

Mortality – CPC once a month (instead of Journal Club). Two to three case will be discussed and moderated by senior faculty. Other consultants invited based on the need.

Besides traditional OHP and 35 mm slide presentations, use of other forms of audio – visual aids may be encouraged

Dissertation Work

1. Every candidate pursuing degree course is required to carry out work on a selected research project under the guidance of a recognised post graduate teacher. The results of such a work shall be submitted in the form of a dissertation.

2. The dissertation is aimed to train a post graduate student in research methods and techniques. It includes identification of a problem, formulation of a hypothesis, search and review of literature, getting acquainted with recent advances, designing of a research study, collection of data, critical analysis, comparison of results and drawing conclusions.

3. Every candidate shall submit to the Registrar (Academic), RGUHS, in the prescribed proforma, a synopsis containing particulars of proposed dissertation work six months from the date of commencement of the course on or before the dates notified by the University. The synopsis shall be sent through the proper channel.

4. Such synopsis will be reviewed and the dissertation topic will be registered by the University. No change in the dissertation topic or guide shall be made without prior approval of the University.

5. The dissertation should be written under the following headings:
   i. Introduction
   ii. Aims or Objectives of study
   iii. Review of Literature
   iv. Material and Methods
   v. Results
   vi. Discussion
   vii. Conclusion
   viii. Summary
   ix. References (Vancouver style)
   x. Tables
   xi. Annexures

6. The written text of dissertation shall be not less than 50 pages and shall not exceed 150 pages excluding references, tables, questionnaires and other annexures. It should be neatly typed in double line spacing on one side of paper (A4 size, 8.27" x 11.69") and bound properly. Spiral binding should be avoided. The dissertation shall be certified by the guide, head of the department and head of the Institution.

Four copies of dissertation thus prepared shall be submitted to the Registrar (Evaluation), six months before final examination on or before the dates notified by the University.

The dissertation shall be valued by examiners appointed by the University. Approval of dissertation work is an essential precondition for a candidate to appear in the University examination.

For some more details regarding Guide etc., please see Chapter I and for books on research methodology, ethics, etc., see Chapter IV.

tion

Details of rotation including ancillary postings year wise as follows:

Year:

General Medicine – First four months in parent medical unit and next eight hs in two or three other units. (PG will return to parent unit during III year of on for six months)

Year:

Cardiology, Neurology – Two months each = 4 months
months each in Pulmonary medicine, Immunology, Pharmacology Oncology, tology, Endocrinology, Nephrology, Gastroenterology, Dermatology & Psychiatry onths

ıl Elective rotation: 2 months

Special elective rotation should be encouraged like Cancer Institutes, Cardiology te, Neurology Institute and Multi-speciality centers of national & international . Candidate should make arrangement much in advance with approval of H.O.D licine.

Medical departments with less number of specialities, may rotate post graduates ɜral medicine department with postings in Medical intensive care unit. Coronary ıit and Emergency departments.

Year:

General Medicine – Parent Medical Unit: 6 months
Two or three medical units: 6 months

During 3rd year rotation PG student works six months in parent unit and three each in other two medical units. Postgraduate in III year training is expected to more responsibilities in managing patients and assist in first year residents and in wards, critical care unit and emergency rooms. Also should participate

actively in teaching undergraduate medical students and prepare himself or herself for the role of General Medical Specialist.

The students are encouraged to attend local, state and national level conferences of API, CSI etc. as part of CME programme.

Monitoring Learning Progress

It is essential to monitor the learning progress of each candidate through continuous appraisal and regular assessment. It not only also helps teachers to evaluate students, but also students to evaluate themselves. The monitoring be done by the staff of the department based on participation of students in various teaching / learning activities. It may be structured and assessment be done using checklists that assess various aspects. Checklists are given in Chapter IV.

The learning out comes to be assessed should included: (i) Personal Attitudes, (ii) Acquisition of Knowledge, (iii) Clinical and operative skills, (iv) Teaching skills and (v) Dissertation.

i) ***Personal Attitudes.*** The essential items are:

- Caring attitudes
- Initiative
- Organisational ability
- Potential to cope with stressful situations and undertake responsibility
- Trust worthiness and reliability
- To understand and communicate intelligibly with patients and others
- To behave in a manner which establishes professional relationships with patients and colleagues
- Ability to work in team
- A critical enquiring approach to the acquisition of knowledge

The methods used mainly consist of observation. It is appreciated that these items require a degree of subjective assessment by the guide, supervisors and peers.

ii) ***Acquisition of Knowledge*** : The methods used comprise of `Log Book' which records participation in various teaching / learning activities by the students. The number of activities attended and the number in which presentations are made are to be recorded. The log book should periodically be validated by the supervisors. Some of the activities are listed. The list is not complete. Institutions may include additional activities, if so, desired.

Journal Review Meeting (Journal Club): The ability to do literature search, in depth study, presentation skills, and use of audio- visual aids are to be assessed. The assessment is made by faculty members and peers attending the meeting using a checklist (see Model Checklist – I, Chapter IV)

Seminars / Symposia: The topics should be assigned to the student well in advance to facilitate in depth study. The ability to do literature search, in depth study, presentation skills and use of audio- visual aids are to be assessed using a checklist (see Model Checklist-II, Chapter IV)

Clinico-pathological conferences : This should be a multidisciplinary case study of an interesting case to train the candidate to solve diagnostic and therapeutic problems by using an analytical approach. The presenter(s) are to be assessed using a check list similar to that used for seminar.

Medical Audit: Periodic morbidity and mortality meeting be held. Attendance and participation in these must be insisted upon. This may not be included in assessment.

(ii) ***Clinical skills***

Day to Day work : Skills in outpatient and ward work should be assessed periodically. The assessment should include the candidates' sincerity and punctuality, analytical ability and communication skills (see Model Checklist III, Chapter IV).

Clinical meetings : Candidates should periodically present cases to his peers and faculty members. This should be assessed using a check list (see Model checklist IV, Chapter IV).

Clinical and Procedural skills : The candidate should be given graded responsibility to enable learning by apprenticeship. The performance is assessed by the guide by direct observation. Particulars are recorded by the student in the log book. (Table No.3, Chapter IV)

Teaching skills : Candidates should be encouraged to teach undergraduate medical students and paramedical students, if any. This performance should be based on assessment by the faculty members of the department and from feedback from the undergraduate students (See Model checklist V, Chapter IV)

Dissertation in the Department : Periodic presentations are to be made in the department. Initially the topic selected is to be presented before submission to the university for registration, again before finalisation for critical evaluation and another

before final submission of the completed work (See Model Checklist VI & VII, Chapter IV)

vi) *Periodic tests:* The departments may conduct three tests, two of them be annual tests, one at the end of first year and the other in the second year. The third test may be held three months before the final examination. The tests may include written papers, practicals / clinicals and viva voce.

vii) Work diary / Log Book- Every candidate shall maintain a work diary and record his/her participation in the training programmes conducted by the department such as journal reviews, seminars, etc. Special mention may be made of the presentations by the candidate as well as details of clinical or laboratory procedures, if any conducted by the candidate.

viii) *Records:* Records, log books and marks obtained in tests will be maintained by the Head of the Department and will be made available to the University or MCI.

Log book

The log book is a record of the important activities of the candidates during his training, Internal assessment should be based on the evaluation of the log book. Collectively, log books are a tool for the evaluation of the training programme of the institution by external agencies. The record includes academic activities as well as the presentations and procedures carried out by the candidate.

Format for the log book for the different activities is given in Tables 1,2 and 3 of Chapter IV. Copies may be made and used by the institutions.

Every student must maintain a record book (diary/log book) and the work carried out by him and the training programme undergone by him during the training, including details of rotation, night calls, procedure and consultations done as M.D. candidates. These record books should be checked and assessed by faculty members imparting the training and certified by the head of the department.

Postgraduate student diary should include following activities.

Format for PG Diary (Log Book)

1. Cases seen on rounds – description of interesting cases and other miscellaneous topics discussed.
2. Outpatient cases seen and details of interesting cases with follow up.
3. Procedures done on inpatients and outpatients and consultation done.
4. Undergraduate teaching done during the day with details.

5. PG training programmes attended – details of bedside clinics, basic sciences, subject and clinical seminars, Journal clubs, mortality meet and hospital conference.
6. Night duties – details of patients managed and emergencies, consultation. Ward calls attended.
7. Details of study with topics covered during off hours in library / home. Periodicals and Journals reviewed with notes on interesting articles.
8. Medical meetings, Seminars, Local API / CSI meetings or other interesting CME, seminars attended.
9. Diary should be reviewed on weekly basis by unit faculty and certified on monthly basis for P.G.'s benefit at the end of each Medical/speciality rotation. Faculty should comment regarding absences and irregularities (Late arrivals and early departure) and make appropriate comments and suggest remedial measure for problematic prodigies.

   Satisfactory progress and 80% attendance mandatory before student allowed to appear for University examination.

10. Size of note book: 15 cm x 21 cm with 200 pages. All note books should have seal of college and H.O.D.s approval: Extra note books utilised as and when necessary. Diaries should be presented at the time of University clinical exam for review by examiners as per University regulations.

Internal evaluation of P.G. Students performance during three years

I Year of M.D. Students

Assessment of students with multiple choice questions multiple short notes covering wide range of topics and practical examination with attention to history taking, symptomtology, clinical skills, relevant diagnostics and therapeutic plans ascertained. Suggested time of evaluation after first six months and at the end of first year rotation.

II Year of M.D. Students

Students should be evaluated at the end of cardiology and neurology postings with Theory and Practical Examinations by concerned specialities along with one faculty from General Medicine and make appropriate recommendation to meet minimal satisfactory guidelines expected of second year PG students. Other specialities with short rotations of one month, should be evaluated with MCQ format and Viva regarding candidates comprehension of the subject.

III Year of M.D. Students

P.G's should be evaluated at the beginning of his 3 rd year training by panel of senior Postgraduate teachers. Suggested pattern of assessment with two essay type

theory papers and multiple choice questions, clinical skills, diagnostic and therapeutic skills evaluated intermittently by unit faculties.

Mock examination suggested – 3 to 4 months prior to final university exam should consist of two question papers each 3 hours duration, one MCO with 200 questions and practical and viva voice similar to university examination under the supervision of senior faculty.

Results of all evaluations should be entered into P.G's diary and departmental file for documentation purposes. Main purpose of periodic examination and accountability is to ensure clinical expertise of students with practical and communication skills and balance broader concept of diagnostic and therapeutic challenges.

Procedure for defaulters: Every department should have a committee to review such situations. The defaulting candidate is counseled by the guide and head of the department. In extreme cases of default the departmental committee may recommend that defaulting candidate be withheld from appearing the examination, if she/he fails to fulfill the requirements in spite of being given adequate chances to set himself or herself right.

Scheme of Examination

A. *Written Papers (Theory)*

There shall be four question papers, each of three hours duration. Each paper shall consist of two long essay questions each question carrying 20 marks and 6 short essay questions each carrying 10 marks. Total marks for each paper will be 100. Questions on recent advances may be asked in any or all the papers. Details of distribution of topics for each paper will be as follows.

7

Paper I will include Basic Sciences, Current Advances in Genetics, Nutrition, and
Clinical Pharmacology

Paper II will include Cardiovascular system – Gastro Intestinal system ,
Infectious diseases including Tropical Medicine

Paper III will include Central Nervous system, Respiratory system, Immune system
connective tissue and joint disorders

Paper IV will include Nephrology, Endocrinology & Metabolism, Haematology, Oncology, Dermatology and Psychiatry Poisoning, Environmental and Occupational hazards

Note: The distribution of chapters / topics shown against the papers are suggestive only.

B.	***Clinical Examination***	***Total marks 200***
	To elicit competence in clinical skills and Differential diagnostic formulations	One Long case – 100 marks Two Short cases- 50 x 2
C.	*Viva Voice Examination*	Marks 100

Aims to elicit candidates knowledge and investigative / therapeutic skills.

1) Viva-voice Examination: (80 marks)
All examiners will conduct viva-voice conjointly on candidate's comprehension, analytical approach, expression and interpretation of data. It includes all components of course contents. In addition candidates may be also be given case reports, charts, gross specimens, Histo pathology slides, x-rays, ultrasound, CT scan images, etc., for interpretation. Questions on use of instruments will be asked. It includes discussion on dissertation also.

2) Pedagogy Exercise: (20 marks)
A topic be given to each candidate in the beginning of clinical examination. He/she is asked to make a presentation on the topic for 8-10 minutes.

D) Maximum marks

Theory	Practical	Viva	Grand Total
400	200	100	700

Recommended Books

I. Clinical Methods

1. Hutchison's Clinical Methods, E. D. Michael Swash, 20th Edition, 1998 (ELBS W.B. Saunders).
2. Chambelain's Symptoms and Signs in Clinical Medicine- Ogilvie & Christopher, 12th Edition, 1997 (Butterworth H)

II. General Medicine

1. Harrison's Principles of Internal Medicine. 14th edition.
2. A.P.I. Textbook of Medicine - G. S. Sainani, 6th edition.
3. Cecil's Textbook of Medicine - Bennet & Plum. 20th edition (Saunders)
4. Oxford Textbook of Medicine- D. J. Seatherall, 3rd edition (Oxford University Press)
5. Davidson's Principles & Practice of Medicine. 19th edition.
6. Current Medical Diagnosis and Treatment - 2000. Lawrence. 39th edition (Mcgraw Hill)
7. Clinical Medicine - Kumar & Clark. 4th edition.
8. Medical Complications during Pregnancy - Bunow & Duffy, 5th edition.
9. Medical Genetics - Lynn b Jorde, 1998.

III. Cardiology

1. The Clinical Recognition of Congenital Heart Diseases - Joseph K. Perloff, 4th edition (Jaypee Brothers)
2. An Introduction to Electrocardiography - Leoschamroth, 7th edition (Black well Science)
3. Practical Electrocardiography - Marriot, 9th edition.
4. Textbook of Cardiovascular Medicine - Eugene Braunwald, 5th edition.
5. The Heart-Hurst, 9th edition.
6. Congenital Heart Diseases in Adults - Perloff, 2nd edition.

IV. Neurology

1. Principles of Neurology - Adam's, Victor, 6th edition (Mcgraw Hill).
2. Diseases of the Brain - Ed Brain, John Walton, 10th edition (Oxford univ)
3. Neurological differential diagnosis - John Patten.

V. Gastro-enterology

1. Current Diagnosis & treatment in Gastroenterology.
2. Diseases of the Liver and Biliary System - S. Sherlock, Dooley, 10th edition (Blackwell Sciences)
3. Gastrointestinal and liver diseases - Mark Feldman, Bruce Scharschmidt, 6th edition (Saundars)
4. Schiff's Diseases of the Liver - Schiff, 8th edition.

VI. Nephrology

1. Textbook of Renal Disease, Judith, Lowrence, 2nd edition (Churchill Livingstone)
2. Diseases of Kidney, Schrier, 6th edition (Little Brown).
3. Manual of Nephrology

II. Hematology

. Wintrobe's Clinical Hematology, Richard Lee, 10th edition (Willium & Wilkins)
. De Gruchy's Clinical Hematology in Medical Practice, Frank Firkin, 5th edition.

III. Rheumatology

. Rheumatology, John Klippel, 1994.

X. Endocrinology

. William's Textbook of Endocrinology, Wilson Fuster, 9th edition (W. B. Saunders)

. Respiratory Medicine/Critical Care Medicine

. Chest Medicine essentials of Pulmonary and Critical Medicine, Ronald George, 3rd edition (Williams & Wilkins)
. Manual of Intensive Care Medicine, Irwin and Rippe, 3rd edition.
. Textbook of Respiratory Diseases, Crofton & Douglas.
. A Practical guide to Pulmonary medicine, Goldstein.
. Interpretation of Pulmonary Function Tests, Hyatt, scalan.

Geriatrics/gerontology

. Geriatric Medicine, 3rd edition.

I. Oncology

. Principles and practice of Oncology, De Vita.

II. Infectious Disease

. A Practical approach to Infectious Diseases, Reese, 3rd edition.
. Manual of Clinical Problems in Infectious Diseases, 4th edition.

Reference Books

natomy/physiology/Biochemistry/Biostatistics

. Clinical Neuroanatomy for Medical Students. 4th edition.
. Textbook of Medical Physiology, Guyton. 9th edition.
. Review of Medical Physiology, Ganong, 18th edition.
. Harper's Biochemistry, 25th edition
. Lippincott's illustrated review-Biochemistry, 2nd edition.
. Methods in Biostatistics, B. K. Mahajan, 6th edition

harmacology/Microbiology/Pathology

. Textbook of Pharmacology, Goodmann & Gillmann's.
. Washington Manual of Medical Therapeutics, 29th edition.

Clinical Methods

1. Mcleod's Clinical Examination, 10th edition (Churchill Livingstone)
2. Bickerstaff's Neurological examination clinical practice, J. Spillane, 6th edition (Blackwell science)
3. Bedside Cardiology, Constant, 5th edition.
4. The Neurologic Examination, de'jong, 5th edition (Lippincott)

Journals

1. Journal of Association of Physicians of India (JAPI)
2. British Medical Journal (BMJ) - weekly
3. New England Journal of Medicine - Bimonthly
4. The Lancet - monthly
5. American Journal of Medicine - monthly
6. Issues in Medical Ethics
7. Indian Journal of Tuberculosis
8. Dermatology Clinics
9. GUT (Gastroenterology)
10. Postgraduate Medical Journal
11. Stroke
12. Blood
13. Neurologic Clinic
14. Indian Journal of Nephrology
15. Public Health Papers

SRI SIDDHARTHA UNIVERSITY

M.D. Degree Examination – Model Question Paper

[Time: 3 Hours] [Max. Marks: 100]

GENERAL MEDICINE
PAPER – I

Q.P. CODE :

Your answers should be specific to the questions asked.
Draw neat labeled diagrams wherever necessary. Answer all questions

LONG ESSAY **2 X 20 = 40 Marks**

1. Define Obesity. Mention the etiopathogensis, complications and treatment of obesity
2. Discuss Thermoregulation. Mention the causes, clinical features and management of Hypothermia

SHORT ESSAY **6 X 10 = 60 Marks**

3. Apoptosis
4. Tumour Markers
5. Vitamin E
6. Trace Elements
7. Dermatitis Herpetiformis
8. Beta lactamase Inhibitors

* * * * *

SRI SIDDHARTHA UNIVERSITY

M.D. Degree Examination – Model Question Paper

[Time: 3 Hours] [Max. Marks: 100]

GENERAL MEDICINE
PAPER – II

Q.P. CODE :

Your answers should be specific to the questions asked.
Draw neat labeled diagrams wherever necessary. Answer all questions

LONG ESSAY **2 X 20 = 40 Marks**

1. Discuss Recent Trends in management of Acute Myocardial Infarction
2. Discuss the Aetiology, Pathology, clinical features investigations & management of Hepato cellular Carcinoma

SHORT ESSAY **6 X 10 = 60 Marks**

3. Discuss H I V Prophylaxis
4. Discuss management of Chloroquine Resistant Falciparum Malaria
5. Discuss Hypertensive Crisis Management
6. Discuss Newer Proton Pump Inhibitors
7. Discuss the Diagnosis and Management of Fat Embolism
8. Post transfusion hepatitis

* * * * *

SRI SIDDHARTHA UNIVERSITY

M.D. Degree Examination – Model Question Paper

[Time: 3 Hours] [Max. Marks: 100]

GENERAL MEDICINE
PAPER – III

Q.P. CODE :

Your answers should be specific to the questions asked.
Draw neat labeled diagrams wherever necessary. Answer all questions

LONG ESSAY **2 X 20 = 40 Marks**

1. Discuss etiology, clinical features, investigatioons and treatment of Community Acquired Pneumonia
2. Discuss the etiopathogensis, clinical features and management of Parkinson's Disease

SHORT ESSAY **6 X 10 = 60 Marks**

3. Alzheimer's disease
4. Mechanisms of Autoimmunity
5. Psoriatic Arthritis
6. Autonomic Neuropathy in Diabetic Mellitus
7. Eosinophilic lung diseases
8. polymyositis

* * * * *

SRI SIDDHARTHA UNIVERSITY

M.D. Degree Examination – Model Question Paper

[Time: 3 Hours] [Max. Marks: 100]

GENERAL MEDICINE
PAPER – IV

Q.P. CODE :

Your answers should be specific to the questions asked.
Draw neat labeled diagrams wherever necessary. Answer all questions

LONG ESSAY **2 X 20 = 40 Marks**

1. Write pathogenesis clinical features and management of Adult respiratory distress syndrome
2. Discuss genetics, clinical features, diagnosis and treatment of Chronic myeloid leukemia

SHORT ESSAY **6 X 10 = 60 Marks**

3. Chronic meningitis
4. Evidence based medicine
5. Reactive arthritis
6. Tropical sprue
7. Coin shadow in x-ray chest
8. Tumour markers

* * * * *