

CURRICULUM
POSTGRADUATE DIPLOMA

2008-09



JAWAHARLAL INSTITUTE OF POSTGRADUATE MEDICAL EDUCATION &
RESEARCH (JIPMER),

PUDUCHERRY-605 006

**Academic Affairs
Concerned Officials**

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Dr. K.S. Reddy	...	Dean
Dr. S. Mahadevan	...	Professor (Academics)
Dr. M.G. Sridhar	...	Professor (Examinations)

**Jawaharlal Institute of Postgraduate Medical Education & Research (JIPMER),
Puducherry-605 006.**

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POSTGRADUATE DIPLOMA

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PG DIPLOMA COURSES

DERMATOLOGY, VENEROLOGY AND LEPROSY (DDVL)

OBJECTIVES:

At the end of this training a candidate should be able to

1. Diagnose and manage independently common skin diseases, sexually transmitted diseases and leprosy
2. Manage independently and efficiently all medical emergencies related with skin, leprosy and venereal disease.
3. Adopt preventive measures at individual and community levels against communicable and non-communicable skin, venereal diseases and leprosy.
4. Teach requisite knowledge and laboratory skills to other medical/paramedical team members.
5. Adopt a compassionate attitude towards the patients (and their families) under his/her charge.
6. Critically evaluate and initiate investigation for solving problems relating to skin (including cosmetic dermatology), venereal diseases and leprosy.
7. The candidate should be able to formulate various topical preparations.

SKILLS TO BE LEARNT:

1. History taking for dermatology, Venereology and leprosy
2. Describe cutaneous findings in dermatological terms in a systematic way
3. Evaluate and manage the common diseases in dermatology and have a broad idea how to approach an uncommon diseases
4. Evaluate and manage STD cases
5. Evaluate and manage HIV positive cases
6. Systematic examination relevant for dermatologic condition
7. Maintain basic skills like pulse, blood pressure chest and cardiac auscultation learnt in MBBS
8. Care of dermatologic emergencies like TEN, Pemphigus, necrotic ENL, angioedema, drug reactions etc.
9. Management of pediatric cases with skin diseases
10. To achieve adequate skills for tests done in side laboratory in day-to-day practice and be familiar with other sophisticated investigations.
11. Able to formulate topical therapies e.g., cream, paste, lotion, ointment

HUMAN VALUES, ETHICAL PRACTICE AND COMMUNICATION ABILITIES:

- a) 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 or religion of the patient.
- b) Develop communication skills, in particular the skill to explain various options available in management and to obtain a true informed consent from the patient.

- c) Provide leadership and get best out of his team in a congenial working atmosphere.
- d) Apply high moral and ethical standards while carrying out human or animal research.
- e) Be humble and accept limitations in his knowledge and skill and to ask for help from colleagues when needed.
- f) Respect patient's rights and privileges including patient's right to information and right to seek a second option.

POSTINGS:

Dermatology : 1 year and 9 months
 Venereology : 6 months
 Leprosy : 6 months
 Side Lab. Procedures : 1 month
 Peripheral posting of 2 months in the departments of Pathology, Medicine, Pediatrics, Microbiology, Plastic surgery etc

TEACHING PROGRAMME:

Short talks
 Seminars
 Journal Club
 Teaching Ward Rounds
 Clinical Case Conference
 Dermatopathology Conference

INTERNAL ASSESSMENT:

Theory and practical assessment every 6 monthly

SCHEME OF EXAMINATION

A. Theory: There shall be three question papers, each of three hours duration. Each paper shall consist of two long questions (25 marks each) and third question of short notes (5 in number, each carrying a weight age of 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:

PAPER-I: BASIC SCIENCES PERTAINING TO DERMATOLOGY, VENERELOGY AND LEPROSY

PAPER-II: DERMATOLOGY INCLUDING SYSTEMIC DISEASES AND RECENT ADVANCES

PAPER-III: STDs AND LEPROSY INCLUDING RECENT ADVANCES

B. Clinical: Marks shall be 200

Type of cases- Long case (Dermatology)-	80
2 Short cases (1 each of STD and leprosy)	35 each=70
10 spotters (Varieties of cases included)	50

C. Viva Voce: 100 Marks

All examiners will conduct viva voce conjointly on candidate. It will be based on course content, analysis of histopathology slides, instruments used in the specialty, X-rays interpretation, etc

Thus total marks for the Diploma in Dermatology, Venereology and Leprosy (DDVL) course will be 700.

PAPER-I: BASIC SCIENCES PERTAINING TO DERMATOLOGY, VENEREOLOGY AND LEPROSY.

- Structure and development of skin and its appendages
- Basement membrane
- Cell kinetics
- Keratinization
- Percutaneous absorption
- Melanocytes and Langerhan's cells
- Melanin and Melanin formation
- Cutaneous circulation
- Mechanism of sweating
- Temperature regulation
- Cutaneous microbiology, virology, mycology and immunology in relation to Dermatology, Venereology and Leprosy
- Genetics in relation to the skin
- Sebum
- Lipid, carbohydrate, and protein metabolism
- Porphyrin
- Inflammation and its mediators
- Pathology in relation to Dermatology, Venereology and Leprosy
- Cytology
- Pharmacology of drugs used in Dermatology, STD and leprosy
- Structure, physiology and examination of the normal genitalia
- Biology of treponemapallidum, Neisseria gonorrhoeae, Chlamydia trachomatis, Herpes viruses HIV and genital human papillomavirus.
- Diagnostic tests for skin diseases, STDs and leprosy
- Cutaneous innervations pathway of skin sensations and anatomy of hands and feet
- Lymphatic drainage of skin and genitalia
- Experimental leprosy
- Principles of clinical diagnosis of skin diseases, STDs and leprosy

PAPER-II DERMATOLOGY INCLUDING SYSTEMIC DISEASES AND RECENT ADVANCES

- Purpura

- Disorders due to lipid metabolism (Xanthomatosis)
- Histiocytosis
- Mastocytosis
- Lymphoma and Leukaemias
- Sarcoidosis and other granulomas
- Amyloidosis
- Porphyria
- Pruritus
- Psychocutaneous disorders
- Cutaneous manifestations of systemic diseases
- Skin and nervous system
- Skin and eyes
- Drug eruptions
- Metabolic, endocrinal and nutritional disorders.
- Skin changes and dermatoses in pregnancy
- Skin changes in different ages
- Dermatitis and eczema
- Papulosquamous disorders
- Acne and acneform dermatoses
- Reactions to physical agents
- Photobiology
- Vesiculobullous disorders
- Disorders of skin colour
- Occupational dermatoses
- Disorders of epidermis and epidermal appendages(hair, nail, sweat glands, sebaceous glands)
- Diseases of Dermis and hypodermis
- Connective tissue disorders
- Disorders of Keratinization
- Disorders of blood vessels and lymphatics
- Disorders of oral cavity and mucous membranes
- Collagen vascular disorders
- Allergic dermatoses
- Genodermatoses
- Tumours of skin (Benign and malignant)
- Cutaneous lymphocytic infiltrates and pseudolymphomas
- Naevi
- Bacterial infections
- Diseases due to Fungi and Yeasts
- Mycobacterial diseases
- Viral dermatoses and Rickettsial infections
- Dermatoses caused by parasites arthropods and insects
- Topical therapy basic concepts
- Topical and systemic skin therapy
- Surgical and physical therapy, including cosmetology, cosmetic procedures, laser's in Dermatology and dermatosurgical procedures
- Recent Advances in Dermatology

PAPER-III - STDs AND LEPROSY INCLUDING RECENT ADVANCES

A : STDs:

- Syphilis
- Gonorrhoea
- L.G.V.
- Chancroid
- Donovanosis
- Chlamydia infections and non-gonococcal urethritis
- Genital herpes
- Genital Human Papilloma Virus infection (Veneral warts) and molluscum contagiosum
- Pediculosis infection, scabies
- Trichomoniasis and other protozoal infections
- Vulvo-vaginal candidiasis and Bacterial vaginosis
- Acute pelvic inflammatory disease (PID)
- Fitz-Hugh-Curtis Syndrome
- Acute epididymitis, prostatitis and proctitis
- HIV/ AIDS (immunopathogenesis, clinical spectrum, mucocutaneous manifestations, opportunistic infections, antiretroviral therapy, counseling, post-exposure management)
- Viral hepatitis
- Non-venereal treponematoses
- Non-venereal genital dermatoses
- Other genital dermatoses— balanoposthitis, cervicitis and vaginitis
- Genital ulcer adenopathy syndrome
- Arthritis associated with STDs in adult
- Ocular manifestations of AIDS and STDs
- Sexually Transmitted Diseases in reproduction, perinatology and pediatrics
- Premalignant and malignant lesions of genitalia
- Legal aspects of STD's and HIV infection
- Psychosexual disorders
- Treatment of STDs and Syndromic approach to treatment of STDs
- Epidemiology and control of STDs
- Recent advances in STDs

B: LEPROSY:

- History of leprosy
- Signs and symptoms and diagnosis of Leprosy
- Classification of Leprosy
- Differential diagnosis of Leprosy
- Complications of Leprosy
- Eye involvement in Leprosy
- Ear, nose and throat involvement in leprosy
- Treatment of Leprosy and its complications
- Leprosy in pregnancy and children
- Epidemiology and control of Leprosy
- Rehabilitation in Leprosy
- Recent advances in Leprosy

MODEL QUESTION PAPER:

DIPLOMA IN DERMATOLOGY, VENEREOLOGY AND LEPROSY

Paper-I Basic Sciences pertaining to Dermatology, Venereology and Leprosy

Time: 3 Hours

(Answer all Questions)

Marks: 100
(10 x 10 Marks)

1. Percutaneous absorption.
2. Structure of sweat glands and mechanism of sweating.
3. Ulnar nerve (origin, course and nerve supply)
4. Ultra structure of M. Leprae
5. Lymphokines
6. Dermoepidermal junction
7. Food pad inoculation
8. Photodynamic Therapy
9. Inflammation & mediators
10. Predictive value

DIPLOMA IN DERMATOLOGY, VENEREOLOGY AND LEPROSY

Paper-II – Dermatology Including Systemic Diseases And Recent Advances

Time: 3 Hours

(Answer all questions)

Marks:100

1. Describe the clinical features and management of leg ulcers. (25)
2. Discuss the clinical features and management of dermatoses of pregnancy. (25)
3. Write short notes on: (5X10=50)
 - a) Acrodermatitis enteropathics
 - b) Malignant melanoma
 - c) Erythrasma
 - d) Mastocytosis
 - e) Cutaneous manifestations of renal disease

DIPLOMA IN DERMATOLOGY, VENEREOLOGY, AND LEPROSY

Paper-III: STDS and Leprosy including Recent Advances

Time: 3 Hours.

(Marks 100)

(Answer all Questions)

1. Discuss aetiopathogenesis and management of trophic ulcers. (25)
2. Write the differential diagnosis of penile sore. How will you investigate and treat such a case? (25)
3. Write short notes on: (5X10=50)
 - a) Herpes genitalis
 - b) Metastatic complications of gonorrhoea
 - c) Neurosyphilis
 - d) Prevention of AIDS
 - e) Type-2 lepra reaction

Recommended Textbooks

Dermatology

1. Burns T, Breathnach S, Cox N, Griffiths C. Rook's Textbook of Dermatology. Seventh edition. Blackwell science. London 2004.
2. Wolff K, Goldsmith LA, Katz SI, Gilchrest BA, Paller AS, Leffell DJ. Fitzpatrick's Dermatology in General Medicine. Seventh edition. McGraw Hill. New York 2008.
3. Moschella SL, Hurley HJ. Dermatology. Third edition. Saunders. Philadelphia 1992.
4. James WD, Berger TG, Elston DM. Andrews' Diseases of the skin Clinical dermatology. Tenth edition. Saunders. Canada 2006.
5. Bologna JL, Jorizzo JL, Rapini RP. Dermatology. Mosby. Spain 2007.
6. Braverman IM. Skin signs in systemic disease. Third edition. Saunders. Philadelphia 1998.
7. Valia RG, Valia AR. IADVL textbook of dermatology. Third edition. Bhalani publishing house. Mumbai 2008.
8. Thappa DM. Textbook of Dermatology, Venereology and Leprology. Second revised edition. Elsevier. New Delhi, 2005.
9. Ghosh S. Recent advances in dermatology. Jaypee Brothers, New Delhi

Venereology

1. Sharma VK. Sexually transmitted diseases and AIDS. Viva books private limited. New Delhi, 2003.
2. Kumar B, Gupta S. Sexually transmitted infections. Elsevier. New Delhi, 2005.
3. Holmes KK, Marah PA, Sparling PF, Lemon SM, Stamm WE, Piot P, Warreheit JN. Sexually transmitted diseases. 4th edition. McGraw-Hill. New York, 2008.

Leprosy

1. Hastings RC, Opromolla DVA. Leprosy. Second edition. Churchill livingstone. Singapore.

2. Jopling WH, McDougall AC. Handbook of leprosy. Fifth edition. CBS publishers. New Delhi, 1996.
3. Dharmendra. Leprosy 2 Volumes – first edition 1985, Samant and company. Mumbai.
4. Bryceson AD, Pfaltzgraff RE. Leprosy. Third edition 1990. Churchill Livingstone. Singapore.

Dermatosurgery

1. Savant SS. Textbook of Dermatosurgery and Cosmetology. Second edition. ASCAD. Mumbai, 2005.
2. Sehgal VN. Dermatologic Surgery Made Easy. Jaypee Brothers, New Delhi, 2006.
3. Roenigk RK, Roenigk HH. Roenigk and Roenigk Dermatologic surgery Principle and Practice. Second edition. Marcel Dekker. New York 1996.

Pediatric Dermatology

1. Schachner LA, Hansen RC. Pediatric Dermatology. Third edition. Mosby, 2003.
2. Harper J, Orange A, Prose N. Textbook of Pediatric Dermatology. Blackwell science. Oxford, 2005.
3. Cohen BA. Pediatric Dermatology. Third edition. Elsevier. China, 2006.

Dermatopathology

1. Elder DE, Elenitsas R, Johnson BL, Murphy GF. Lever's Histopathology of the Skin. Ninth edition. Lippincott Williams and Wilkins. Philadelphia, 2005.
2. Weedon D, Strutton G. Skin pathology. Second edition. Churchill Livingstone. London, 2002.
3. Mysore V. Fundamentals in Dermatopathology. BI Publications, New Delhi.

Contact dermatitis

1. Rietschel RL, Fowler JF. Fisher's contact dermatitis. Fifth edition. Lippincott Williams and Wilkins. Philadelphia. 2001.
2. Cronin E. Contact dermatitis. Churchill Livingstone. Edinburgh.

Therapeutics

1. Lebwohl MG, Heymann WR, Berth-Jones J, Coulson I. Treatment of Skin Disease. Comprehensive therapeutic strategies. Second edition 2006. Elsevier. New Delhi.
2. Shelley. Advanced Dermatologic Therapy. Second edition 2001.
3. Wolverton. Comprehensive Dermatologic Drug Therapy. Second edition 2007.

Recommended Journals

1. Indian Journal of Dermatology, Venereology, and Leprology.
2. Indian Journal of Dermatology.
3. Indian Journal of Leprosy.
4. Indian Journal of Sexually Transmitted Diseases.
5. Archives of Dermatology.
6. Journal of American Academy of Dermatology.
7. International Journal of Dermatology.

8. British Journal of Dermatology.
9. Clinical and Experimental Dermatology.
10. Dermatology Online Journal.
11. Internet Journal of Dermatology.
12. Indian Journal of Pediatric Dermatology.
13. Pediatric Dermatology.
14. Dermatologic Surgery (Optional).
15. International Journal of Leprosy
16. Leprosy Review.
17. International Journal of STD and AIDS.
18. Sexually Transmitted Infections.

OPHTHALMOLOGY (D.O.)

COURSE CONTENT:

- PAPER I: Applied Basic Sciences in Ophthalmology
- PAPER II: Clinical Ophthalmology including refraction
- PAPER III: Recent Advances including investigative therapeutic procedure, Community Ophthalmology including national programme, rehabilitation of blind.

SYLLABUS

Paper I: Applied Basic Sciences in Ophthalmology

I. ANATOMY AND PHYSIOLOGY

- a) Anatomy of the eye and ocular adnexa
- b) Embryology of the eye and adnexa
- c) The visual pathways
- d) Anatomy and Physiology of motor mechanism
- e) Physiology of vision, colour vision, accommodation
- f) Binocular vision and its development
- g) Maintenance of intra ocular pressure
- h) The Neurology of vision (Visual pathway, papillary pathways and reaction) dark adaptation.
- i) Optics – elementary Physiological optics, optics of retinoscopy and other dark room procedures and ophthalmic equipments.
- j) Physiology of aqueous humour and its circulation and maintenance of intraocular pressure.
- k) Maintenance of corneal transparency.
- l) Tear circulation
- m) Blood aqueous barrier.

II. PATHOLOGY AND MICROBIOLOGY

- a) Pathology of ocular and adnexal lesions (Inflammatory, neoplastic, lens specification etc)
- b) Microbiology of common organism affecting the eye – Bacteria Staph. Strepto – pneumococci, gonococci diphtheria, Morax axenfield bacillus, AFB, Lepra bacilli, pseudomonas etc
- c) Virus – Herpes Zoster, Simplex, adenovirus, trachoma etc.
- d) Parasites, protozoa and fungi causing ocular lesion e.g., toxoplasma amoebiasis, toxocariasis, treponema, cysticercus, hydatid, microfilaria aspergillus, penicillium, candida etc.

III. BIOCHEMISTRY

- a) Vitamin A and its metabolism
- b) Glucose metabolism
- c) Aqueous composition
- d) Biochemical aspects of cataract (Senile and diabetic)
- e) Thyroid function tests
- f) Tear film and its composition.

IV PHARMACOLOGY

Pharmacology of drugs used in Ophthalmology

- a) Autonomic drugs – Sympathomimetic, Sympatholytics, cholinergic, anticholinergic agents etc.
- b) Antibiotics and chemotherapeutic agents used in ophthalmology
- c) Anti-inflammatory agent – steroid and non-steroidal agents
- d) Anti virals and antifungals used in ophthalmology
- e) Local anaesthetics
- f) Dyes used in ophthalmology – fluorescein, rose Bengal etc.
- g) Tear Substitutes
- h) Drugs used to reduce intra ocular pressure (systemic and topical agents)
- i) Ocular penetration of systemically administered drugs and topical agents.
- j) Anti-mitotic agents and immunosuppressives

V) OPTICS

PAPER II: Clinical Ophthalmology including refraction

PAPER III: Recent Advances including investigative therapeutic procedure, Community Ophthalmology including national programme, rehabilitation of blind.

SCHEME FOR CLINICAL AND ORAL EXAMINATION

1. Clinical examination: It will consist of one long case, two short cases, 2 fundus examinations, one case for refraction.
2. Oral: It will consist of examination of one histopathology slide, one microbiology slide, pathology specimen, x-rays and charts – field defects, diplopia charting, instruments and general viva.

INSTRUCTIONS TO PAPER SETTER

1. Each paper will have maximum of 100 marks and will be of 3 hours duration.
2. Paper I will consist of 10 short essay type questions each of 10 marks.
3. Paper II, III and IV will consist of 3 questions; two long questions – each carries 20 marks; and the third question will consist of 6 short notes each of 10 marks.

DIPLOMA IN OPHTHALMOLOGY

PAPER I

(APPLIED BASIC SCIENCE IN OPHTHALMOLOGY)

Time: 3 Hours

Marks: 100

- I. Write short notes on:- (10 X 10)
- Development of lens.
 - Maintenance of intraocular pressure.
 - Structure and composition of tear film.
 - Wald's visual cycle.
 - Histopathology of Retinoblastoma and its prognosis.
 - Laboratory diagnosis of Acanthamoeba
 - Hypersensitivity in Eye
 - Describe the various parts of slit lamp and its use.
 - Steroids in Ophthalmology.

DIPLOMA IN OPHTHALMOLOGY

PAPER II

(CLINICAL OPHTHALMOLOGY INCLUDING REFRACTION)

Time: 3 Hours

Marks: 100

- Aetiology, investigations and management of infantile esotropia 25 Marks
- What are the causes of sudden painless loss of vision in a 50 year old male and how will you investigate and treat? 25 Marks
- Write short notes on:- 5 X 10 = 50 Marks
 - Clinical features and treatment of dendritic corneal ulcer.
 - Neovascular glaucoma (Etiopathogenesis & Management).
 - Ocular signs of thyroid disease.
 - Low vision aid.
 - Macular hole

PAPER III

(RECENT ADVANCES INCLUDING INVESTIGATION, THERAPEUTIC PROCEDURES, COMMUNITY OPHTHALMOLOGY INCLUDING NATIONAL PROGRAMME, REHABILITATION OF BLIND)

Time: 3 Hours

Marks: 100

- Recent advances in cataract surgery 25 marks.
- Recent advances in the treatment of Rheumatogenous RD 25 marks.
- Write short notes on 5 X 10 = 50 marks.
 - Vision 2020
 - Application of UBM (Ultrasound biomicroscopy)
 - Stem cell transplantation
 - Neuroprotection in glaucoma.
 - Write 5 causes of preventable blindness. Discuss in detail about any one condition.

DIPLOMA IN ORTHOPAEDICS (D.ORTHO.)

SYLLABUS

Paper-I : Basic applied science topics as applied to Musculoskeletal System, Physical Medicine and Rehabilitation, Radiology, Radiotherapy.

Paper-II : Principles and Practice of Orthopaedics

Paper- III : Traumatology

SYLLABUS

Paper –I :

1. 1 Anatomy including Embryology and Genetics as applied to Musculoskeletal system
2. Physiology and Biochemistry as applied to Musculoskeletal System including blood coagulation, immunity, fluid and electrolyte balance
3. Pathology and Microbiology as applied to Musculoskeletal System
4. Forensic Medicine as applied to Musculoskeletal System
5. Pharmacology as applied to Musculoskeletal System
6. Basic Principles of Physical Medicine and Rehabilitation
7. Basic Principles of Bone Banking and Tissue Transplantation
8. Biomaterials and Biomechanics as applied to Musculoskeletal System
9. Radiology and Radiotherapy as applied to Musculoskeletal System

Paper- II

Epidemiology, Etiology, Pathology, Clinical Features, Diagnosis, differential diagnosis, Complications and Management including Prevention and Rehabilitation of the following:

1. Developmental diseases and congenital anomalies affecting musculoskeletal system.
2. Dystrophies pertaining to musculoskeletal system
3. Dysplasias of musculoskeletal system
4. Neurologic diseases affecting musculoskeletal system
5. Degenerative diseases of musculoskeletal system
6. Arthropathies
7. Infective diseases of musculoskeletal system
8. Tumors and tumor-like conditions of musculoskeletal system

Paper- III

1. General principles of diagnosis and management of injuries to musculoskeletal system and their complications.
2. Epidemiology, Mechanism, clinical features, Diagnosis, complications, management including prevention and rehabilitation of musculoskeletal injuries in all age groups
3. Diagnosis and management of sports injury
4. Principles of ‘first aid’, ‘basic trauma life support’ and ‘advanced trauma life support’

5. Management of mass casualties
6. Medical response and preparedness in disasters

MODEL QUESTION PAPERS

DIPLOMA IN ORTHOPAEDICS – PAPER I
(APPLIED BASIC SCIENCES)

ANSWER ALL QUESTIONS

Time: 3 Hours

Total Marks: 100
(10 X 10 Marks)

1. Metabolism of calcium and phosphorus
2. Nonsteroidal Anti-inflammatory Drugs.
3. What is ultrasonography? What is the principle behind its diagnostic use? List its use in orthopaedics.
4. What are the pathological types of osteosarcoma? Give the salient pathological features of each type.
5. What are different types of therapeutic exercises? Give indications of each.
6. Medicolegal issues in orthopedic trauma
7. What is deep vein thrombosis? Mention drugs used for prevention along with dosage.
8. p – value
9. PET – CT Imaging
10. Estimation of Age from X-rays

DIPLOMA IN ORTHOPAEDICS – PAPER II
(ORTHOPAEDIC DISEASES)

Time: 3 Hours

Total Marks: 100

ANSWER ALL QUESTIONS

1. What is Pott's disease of spine? Describe etiopathology, clinical features, and complications of it. Discuss management of a case with early onset paraplegia. (25)
2. Classify and outline management of Proximal Focal Femoral Dysplasia (25)
3. Write short answers on: (5 X 10= 50)
 - a) Synovial fluid analysis
 - b) Give causes and clinical features of Carpal Tunnel Syndrome
 - c) Patho-mechanism of deformities of knee in Poliomyelitis
 - d) Pathology, Radiology and Surgical treatment of Osteoid Osteoma
 - e) Pathology, Clinical features and complications of 'marble bone disease'.

DIPLOMA IN ORTHOPAEDICS – PAPER III
(TRAUMATOLOGY)

Time: 3 Hours

Total Marks: 100

ANSWER ALL QUESTIONS

1. A 80 year old male falls in bathroom and injures his right hip. He has gross swelling of his hip region with shortening and complete external rotation of the limb. Describe the types of this fracture, management and complications. (25)
2. Classify and give prognosis of Physeal injuries (25)
3. Write short answers on: (10 X 8 = 80)
 - a) ACL reconstruction techniques
 - b) Principles of Triage in mass casualties
 - c) Etiopathology and clinical features of Compartment Syndrome
 - d) Types of SCI and their evaluation according to ASIA.
 - e) Pronation-external rotation injury of ankle and its management

01. Rack Wood & Green's Fractures in adults [Buchols]
02. Rack Wood & Willein's Fractures in children
03. Skeletal trauma [Browns, Jupiter, Levine, Trafton]
04. Mercer's Orthopaedics Surgery.[Mercer]
05. Campbell's Operative Orthopaedics.[Cenate]
06. Turek's Orthopaedics Principles & their application.[Weinstein]
07. Tachdjian's Paediatric Orthopaedics.[Herring]
08. Deleo & Drez's Orthopaedic Sports Medicine Principles and Practice.[Delee]
09. Apley's System of Orthopaedics & Fractures.[Solomen]
10. Primer on the Metabolic Bone Diseases and Diseases of Mineral Metabolism.
11. Paediatric Orthopaedics and Fractures. [Sharrard]
12. The Closed Treatment of Common Fractures.[John Charnley]
13. AO Principles of Fracture Management.
14. Orthopaedics Physical Assessment.[Magee]
15. Bone Tumours.[Mirra]
16. Kelley's Textbook of Chemotherapy.[Harris]
17. The Orthopaedic Physical Examination.[Ronald McRac]
18. Clinical Orthopaedics Examination.[McRac]
Bone and Joint Imaging.[Rasmiak]
19. Orthopaedic Surgical Exposum.[Hoppanfield]
20. Tuberculosis of Skeletal System.[Tuli]
21. Traction and Orthopaedics Application.[Stewart].

JOURNALS

01. Indian Journals of Orthopaedics.
02. Journals of Bone & Joint Surgery.
03. Clinical Orthopaedics & Related Research.
04. Orthopaedic Clinics of North America.
05. Journals of Trauma.
06. Journals of Orthopaedic Trauma.

DIPLOMA IN CHILD HEALTH (D.C.H.)

1.0. General Guidelines

Despite inclusion of Paediatrics as a subject of examination at the undergraduate level, DCH courses would need to be continued in view of the limited number of seats for MD Paediatrics in various medical colleges and the need of large number of Pediatricians required to man health services at various levels including the community health centers and district hospitals. However, DCH seats should be converted to MD seats wherever possible.

Clinical rotation should be appropriately reduced, for example, neonatology for 4-6 months instead of 6-9 months. The syllabus pertaining to research methodology, biostatistics etc. included in the MD course should be omitted for the DCH course. Contents should lay less emphasis on basic sciences and much greater emphasis on commonly encountered pediatric problems such as nutrition, infections, social and preventive Paediatrics etc. Principle of assessment i.e., formative (internal) and summative (external) assessment would remain the same as for MD course. Final examination should be the same as for MD except that it would have only 3 theory papers.

2.0. Goal

The goal of DCH program is to produce a competent pediatrician who:

- (i) recognizes the health needs of infants, children and adolescents and carries out professional obligations in keeping with principles of national health policy and professional ethics;
- (ii) has acquired the competencies pertaining to Paediatrics that are required to be practiced in the community and secondary levels of health care system;
- (iii) has acquired skills in effectively communicating with the child, family and the community;
- (iv) is aware of the contemporary advances and developments in medical sciences as related to child health; and
- (v) has acquired skills in educating medical and paramedical professionals.

3.0. Learning Objectives

At the end of the DCH course, the student should be able to:

- (i) recognize the key importance of child health in the context of the health priority of the country;
- (ii) practice the specialty of Paediatrics in keeping with the principles of professional ethics;
- (iii) identify social, economic, environmental, biological and emotional determinants of child and adolescent health, and institute diagnostic, therapeutic, rehabilitative, preventive and promotive measures to provide holistic care to children;

- (iv) recognize the importance of growth and development as the foundation of Paediatrics and help each child realize her/his optimal potential in this regard;
- (v) take detailed history, perform full physical examination including neurodevelopmental and behavioural assessment and anthropometric measurements in the child and make clinical diagnosis;
- (vi) perform relevant investigative and therapeutic procedures for the pediatric patient;
- (vii) interpret important imaging and laboratory results;
- (viii) diagnose illness in children based on the analysis of history, physical examination and investigate work up;
- (ix) plan and deliver comprehensive treatment for illness in children using principles of rational drug therapy;
- (x) plan and advise measures for the prevention of childhood disease and disability;
- (xi) plan rehabilitation of children suffering from chronic illness and handicap, and those with special needs;
- (xii) manage childhood emergencies efficiently;
- (xiii) provide comprehensive care to normal, 'at risk' and sick neonates;
- (xiv) demonstrate skills in documentation of case details, and of morbidity and mortality data relevant to the assigned situation;
- (xv) recognize the emotional and behavioural characteristics of children, and keep these fundamental attributes in focus while dealing with them;
- (xvi) demonstrate empathy and humane approach towards patients and their families and keep their sensibilities in high esteem;
- (xvii) demonstrate communication skills of a high order in explaining management and prognosis, providing counseling and giving health education messages to patients, families and communities;
- (xviii) develop skills as a self-directed learner, recognize continuing educational needs, use appropriate learning resources, and critically analyze relevant published literature in order to practice evidence-based Paediatrics;
- (xix) play the assigned role in the implementation of National Health Programs, effectively and responsibly;
- (xx) organize and supervise the desired managerial and leadership skills;
- (xxi) function as a productive member of a team engaged in health care, research and education.

MODEL QUESTION PAPER
Diploma in Pediatrics Examination
(2008 Scheme)

Paper I – Basic Clinical Sciences applied to Pediatrics

Time: 3 hours

Max Marks: 100

Write briefly on:

- 1) Development of Heart
- 2) Neural tube embryology and its defects
- 3) Phenylalanine Metabolism
- 4) Functions of Mineralocorticoids
- 5) Capsulated micro organisms
- 6) Adverse Drug Reactions
- 7) Role of Kidneys for Acid-base balance
- 8) Circulation of CSF
- 9) Anti-Cancer drugs and cell cycle
- 10) Anti-cholinesterase's

(10 x 10 = 100 marks)

Diploma in Pediatrics Examination
(2008 Scheme)

Paper II – Neonatology and Community Pediatrics

Time: 3 hours

Max Marks: 100

1. 2 day old neonate 3 kg presents with hypoglycemia. Outline the causes and detail the management.
(25 marks)
2. What is the role of Pediatrician in organizing a Pulse Polio Immunization Camp? Discuss the importance of optional vaccines.
(25 marks)
3. Write briefly on
 - a) Anti-rabies Vaccine
 - b) Prevention of Thalasemia
 - c) Blood Transfusion in newborn
 - d) Seizures in an 15 Day old neonate
 - e) Head circumference

(10 x 5 = 50 marks)

Diploma in Pediatrics Examination
(2008 Scheme)

Paper III – General Pediatrics including recent advances

Time: 3 hours

Max Marks: 100

1. What are the uses of corticosteroids in Pediatric practice. Outline the treatment of First attach of Hephrotic syndrome.
(25 marks)
2. Describe the causes and Management of Vesico-Urethenic reflux in children.
(25 marks)
3. Write briefly on:

- a) Childhood leprosy
- b) Congenital glaucoma
- c) Counselling to parents of child with Trisomy-21
- d) Prazosin
- e) Petit mal epilepsy

(10 x 5 = 50 marks)

DIPLOMA IN MEDICAL RADIOLOGY - DIAGNOSIS (DMRD)

SYLLABUS/COURSE CONTENT

A. BASIC RADIOLOGY

I. Imaging Techniques and Modalities :

- 1.1.1 Department Organisation: Digital Imaging and PACS
- 1.1.2 Digital Imaging and PACS : Picture Archiving and Communication System
- 1.1.3 Digital Imaging and PACS : what should a radiologist expect from PACS
- 1.1.4 Digital Imaging and PACS : Image processing in Computed Radiography
- 1.2 Intravascular Contrast Media
- 1.3 Whole body Computed Tomography : Recent Advances
- 1.4 Magnetic Resonance Imaging basic Principles
- 1.5 Ultrasound : general Principles
- 1.6 Radionuclide imaging
 - 1.6.1 Radionuclide Imaging : General Principles
 - 1.6.2 Radionuclide Imaging : Pediatric Nuclear Medicine
- 1.7 Dual Energy X-ray Absorptiometry
- 1.8 Functional and Physiological Imaging
- 1.9 Medicolegal issues in Diagnostic Radiology
- 1.10 Radiation Protection and patient doses in diagnostic radiology

II. Respiratory System :

1.1 Techniques of Investigations:

- 1.1.1 Standard Techniques :
- 1.1.2 Tomography :
 - a) Conventional film Tomography
 - b) Computed Tomography
- 1.1.3 Digital Radiography
- 1.1.4 Magnetic Resonance Imaging
- 1.1.5 Radionuclide Imaging :
 - a) Ventilation / Perfusion Scintigraphy
 - b) Other thoracic scanning techniques
- 1.1.6 Bronchography
- 1.1.7 Ultrasound
- 1.1.8 Angiography
- 1.1.9 Lung Biopsy & Other Interventional Techniques.

1.2 Normal Chest:

- 1.1.1 The Lungs (Radiological Anatomy & CT Terminology)
- 1.1.2 The Central Airways
- 1.1.3 The Lungs beyond Hila
- 1.1.4 The Hila
- 1.1.5 The Mediastinum :
 - a) CT & MRI
 - b) Plain film appearances

- i) The junctional lines :
- ii) The right Mediastinum above azygous vein
- iii) The left Mediastinum above Aortic arch
- iv) The supra aortic Mediastinum on lateral view
- v) The right Middle Mediastinum border below azygous arch.
- vi) The left cardiac border below aortic arch
- vii) The para spinal lines.
- viii) The retrosternal line.

1.1.6 The Diaphragm

1.3 Interpretation the Chest Radiograph:

1.3.1 Identification o the Radiograph

1.3.2 Technical Consideration

- #### 1.3.3 Detection and Description of abnormalities :
- i) Silhouette Sie
 - ii) Alterations
 - iii) Consolidation
 - iv) Collapse
 - v) Nodular Opacities
 - vi) Ring Opacities
 - vii) Linear/Intestinal/Pleural /Chest Wall Opacities.
 - viii) Abnormal Transradiancy

1.4 The Chest Wall, Pleura & Diaphragm:

1.4.1 Chest Wall :

- i) Soft tissue /Breasts
- ii) Ribs /Sternum/Clavicle, Spine

1.4.2 The Pleura :

- i) Normal Pleura
- ii) Pleural Pathologies

1.4.3 The Diaphragm :

- i) Height/Eventration / Movements/ Paralysis
- ii) Hernias / Trauma/ Neoplasms

1.5 The Mediastinum:

1.5.1 Techniques:

- #### 1.5.2 Mediastinal Masses:
- i) Thyroid / Para Thyroid Masses / Thymic tumors/ Thymic hyperpalsia/ Teratoma / Germ cell Tumor.
 - ii) Mediastinal lymphadenopathy
 - iii) Neurogenic Tumors
 - iv) Extra medullary haematopoiesis / Mesenchymal Tumors/ Herniation of abdominal fat / Mediastinal lipomatosis / Aneusyrums.

1.5.3 Differential Diagnosis :

- #### 1.5.4 Other Mediastinal Lesions :
- i) Acute / fibrosing Mediastinitis

- 1.6 **Pulmonary Infections in Adults:**
 - 1.6.1 Pneumonia :
 - 1.6.2 Associated features and complications of pneumonia.
 - 1.6.3 Pulmonary tuberculosis
 - 1.6.4 HIV & AIDS

- 1.7 **Large Airway Obstruction:**
 - 1.7.1 **Collapse:** General features / Collapse of individual lobes/ collapse of entire lung / segmental collapse/ Rounded atelectasis/ Non-obstructive collapse.
 - 1.7.2 **Obstructive Pneumonitis / Bronchocele / Broncheictasis**

- 1.8 **Pulmonary lobar Collapse essential considerations:**
- 1.9 **Chronic inflow Obstruction:**
 - 1.9.1 Asthama:
 - 1.9.2 Choronic Bronchitis and Enphysema
 - 1.9.3 Bronchiolitis

- 2.0 **Pulmonary Neoplasms:**
 - 2.0.1 Bronchial Carcinomas
 - 2.0.2 Benign Pulmonary Tumors
 - 2.0.3 Malignant Lymphoma
 - 2.0.4 Metastases
 - 2.0.5 The solitary Pulmonary Nodule
- 2.1 **Diffuse Pulmonary Disease / Industrial Lung Disease / HRCT:**
 - 2.1.1 Pulmonary Oedema :
 - 2.1.2 Diffuse Pulmonary Haemorrhage
 - 2.1.3 Inhalation of particulate matter
 - 2.1.4 Diffuse Pulmonary Fibrosis
 - 2.1.5 Sarcoidosis / Collagen Vascular Disease / Systemic Vasculitidis / Lymphoid Disorders of Lungs / Pulmonary Eosinophilia / Drug induced Lung Disease
- 2.2 **Chest Trauma:**
- 2.3 **Pulmonary Thromboembolism:**
 - 2.3.1 Imaging Chest Radiography / Radionuclide Study / Pulmonary Arteriography / CT / MRI
- 2.4 **Post Operative & Critically ill Patient:**
 - 2.4.1 Cardiopulmonary Disease
 - 2.4.2 Post Thoracotomy Radiograph
 - 2.4.3 Support and Monitoring apparatus
 - 2.4.4 Radiation Therapy

- 2.5 **Chest Radiography after Lung Transplantation:**
- 2.6 **Congenital Pulmonary Anomalies:**
 - 2.6.1 Abnormal Development of Lung Bud
 - 2.6.2 Abnormalities of separation of the lung bud from the foregut
 - 2.6.3 Abnormalities of Pulmonary Vasculature
 - 2.6.4 Ectopic of Hamartomatous Development

- 2.7 **The Infant and Young Child:**
 - 2.7.1 Pathologies of Diaphragm
 - 2.7.2 Pleural Abnormalities
 - 2.7.3 Inflammation
 - 2.7.4 Airway Obstruction
 - 2.7.5 Diffuse Lung Disease
 - 2.7.6 Respiratory Distress in Newborn Baby
- 2.8 **Interventional Techniques in Thoracs:**
 - 2.8.1 Biopsy Procedures
 - 2.8.2 Throacic Drainage Procedure
 - 2.8.3 Thoracic Sympathectomy
 - 2.8.4 Therapeutic Embolisation
 - 2.8.5 Dilatation & Stenting Techniques
 - 2.8.6 Extraction Techniques.

III. THE HEART AND GREAT VESSELS:

- 3.1 **Cardiac Anatomy and Enlargement:**
 - 3.1.1 Plain Radiography
 - 3.1.2 Enlargement of various chambers on Plain Radiography
- 3.2 **Echo Cardiography including Doppler:**
- 3.3 **Nuclear Cardiology:**
- 3.4 **Digital Imaging of Cardiovascular System:**
- 3.5 **Magnetic Resonance of Heart and Circulation:**
- 3.6 **Congenital Heart Disease:**
 - 3.6.1 General Principles
 - 3.6.2 Left to right shunts
 - 3.6.3 Central Sinuses
 - 3.6.4 Other Congenital Heart Disease
- 3.7 **Aquired Heart Disease:** i) Non Rheumatic/ Rheumatic Mitral VD
ii) Tricuspid VD
iii) Aortic VD
- 3.8 **Ischaemic Heart Disese:** i) Coronary Atreriography
ii) Left Ventriculography
iii) Angina Pectoris
iv) Myocardial Infarction
v) Mechanical Complication of MI
- 3.9 **Pumlonary Circulation:** i) Anatomy and Physiology
ii) Pulmonary Vascularity in Heart Disease
iii) Pulmonary Arterial hypertension/ Its Imaging
iv) MR in Pulmonary Vascular Abnormalities
- 3.10 **Cadiomyopathy , Cardio Tumors, Trauma:**
- 3.11 **The Imaging of Prosthetic Cardiac Valves:**
- 3.12 **The pericardium:**

3.13 Thoracic Aorta:

3.14 Interventional Procedures and Heart Disease:

IV. THE GASTROINTESTINAL TRACT:

- 4.1 **The Abdomen: Plain Radiographic findings In acute abdomen**
 - 4.1.1 Normal appearances
 - 4.1.2 Abdominal Calcification/Dilatation of bowel/Pneumoperitoneum
 - 4.1.3 The Post Operative Abdomen
 - 4.1.4 Inflammatory Conditions
- 4.2 **The Esophagus**
 - 4.2.1 Anatomy and Functions
 - 4.2.2 Methods of Examination
 - 4.2.3 Pathologies of Esophagus
 - 4.2.4 Motility Disorders
 - 4.2.5 Extrinsic lesions/miscellaneous conditions
- 4.3 **The stomach**
 - 4.3.1 Radiological anatomy and methods of examination
 - 4.3.2 Inflammatory Diseases
 - 4.3.3 Neoplastic Conditions
 - 4.3.4 Radionuclide Studies in Stomach
- 4.4 **The Duodenum**
 - 4.4.1 Anatomy and Normal Appearances
 - 4.4.2 Methods of Radiological Examination
 - 4.4.3 Peptic ulceration
 - 4.4.4 Gastro heterotopia/diverticula
 - 4.4.5 Neoplasms benign and malignant
- 4.5 **The Small Intestine**
 - 4.5.1 Anatomy and normal appearances
 - 4.5.2 Methods of radiological examination
 - 4.5.3 Crohns disease/Coeliac Disease/Neoplasms/various conditions
- 4.6 **The Large Bowel**
 - 4.6.1 Anatomy and Normal Appearances
 - 4.6.2 Methods of Radiological Examination
 - 4.6.3 Tumors
 - 4.6.4 Diverticular Disease
 - 4.6.5 Colitis
 - 4.6.6 Aids
 - 4.6.7 Miscellaneous Conditions
- 4.7 **Peritoneum, Mesentry and Omentum**
 - 4.7.1 Peritoneal spaces and reflections
 - 4.7.2 Abnormalities of Peritoneum
 - 4.7.3 Abnormalities of Mesentry
 - 4.7.4 Abnormalities of greater Omentum
- 4.8 **Gastrointestinal Angiography**
 - 4.8.1 General Consideration

- 4.8.2 Gastro intestinal bleeding
- 4.9 **Interventional Radiology in Gastrointestinal tract**
 - 4.9.1 Introduction
 - 4.9.2 Esophagus
 - 4.9.3 Stomach and Duodenum
 - 4.9.4 Small Intestine
 - 4.9.5 Colon and Rectum
- 4.10 **Pediatric Gastrointestinal Radiology**
 - 4.10.1 **The Neonate**
 - 4.10.2 **The Infant and Older Child**

V. *Liver, Biliary tract, Pancreas, Endocrine System and Lymphoma*

- 5.1 **The Liver**
 - 5.1.1 Normal and Variant Anatomy
 - 5.1.2 Liver Imaging Techniques
 - 5.1.3 Diffuse Disease
 - 5.1.4 Focal Disease
 - 5.1.5 Intervention
- 5.2 **The Biliary Tract**
 - 5.2.1 Anatomic Consideration
 - 5.2.2 Methods of Investigation
 - 5.2.3 Biliary Disorders
- 5.3 **Interventional Techniques Hepatobiliary System**
 - 5.3.1 Liver Biopsy
 - 5.3.2 Biliary Obstruction
 - 5.3.3 Malignant Biliary Obstruction
 - 5.3.4 Percutaneous Cholangiography and Biliary Drainage Procedures
 - 5.3.5 Vascular Interventional Techniques in Hepatobiliary System
- 5.4 **Radiology of Liver Transplantation**
 - 5.4.1 Indications
 - 5.4.2 Pre Transplant Assessment
 - 5.4.3 Radiological Procedures before Transplantation
 - 5.4.4 Post Transplantation Monitoring and Complications
- 5.5 **The Pancreas**
 - 5.5.1 Embryology and Anatomy
 - 5.5.2 Congenital Anomalies
 - 5.5.3 Multisystem Diseases with Pancreatic involvement
 - 5.5.4 Pancreatitis
 - 5.5.5 Pancreatic Neoplasms
 - 5.5.6 Trauma
 - 5.5.7 Interventional Radiology in Pancreas
- 5.6 **Imaging of the Endocrine System :**
 - 5.6.1 Hypothalamic – Pituitary Axis
 - 5.6.2 Pineal Gland
 - 5.6.3 Thyroid Gland
 - 5.6.4 Parathyroid Gland
 - 5.6.5 Pancreatic & Gastrointestinal Endocrine Disorders

- 5.6.6 Carcinoid Tumors
- 5.6.7 Adrenal Glands
- 5.6.8 Female Reproductive System
- 5.6.9 Male Reproductive System
- 5.7 **Reticuloendothelial Disorders : Lymphoma**
 - 5.7.1 Epidermilogy
 - 5.7.2 Histopathological Classification
 - 5.7.3 Staging Investigation and Management
 - 5.7.4 Extranodal Manifestation of Lymphoma
 - 5.7.5 Monitoring response to therapy
- 5.8 **Reticuloendothelial Disorders : The Spleen**
 - 5.8.1 Imaging Techniques
 - 5.8.2 Normal Anatomy
 - 5.8.3 Splenomegaly
 - 5.8.4 Benign Mass Lesions
 - 5.8.5 Malignant Mass Lesions
 - 5.8.6 Splenic Trauma
- 5.9 **Paediatric Liver Biliary Tract and Spleen :**
 - 5.9.1 Techniques
 - 5.9.2 Approach
 - 5.9.3 Liver
 - 5.9.4 Biliary Disease
 - 5.9.5 Spleen
- 5.10 **Paediatric Endocrine and Bone Density Imaging :**
 - 5.10.1 Ultrasound
 - 5.10.2 Nuclear Medicine
 - 5.10.3 Magnetic Resonance Imaging
 - 5.10.4 Bone Densitometry in Children
- 5.11 **Neuroblastoma :**
- VI Genito Urinary Tract:**
 - 6.1 Methods of Investigation:
 - 6.2 Radionuclide Imaging in Genito Urinary Tract:
 - 6.3 Urodynamics
 - 6.4 **Reno Vascular Disease:**
 - 6.4.1 Renal Arteriography
 - 6.4.2 Vascular Abnormalities
 - 6.4.3 Radiological Management of Reno Vascular Disease
 - 6.5 **Renal Parenchymal Disease**
 - 6.5.1 Normal Appearance
 - 6.5.2 Renal Parenchymal Disease
 - 6.5.3 Parasitic Infections
 - 6.6 **Renal Masses:**
 - 6.6.1 Methods of Analysis
 - 6.6.2 Pathological Renal Masses
 - 6.6.3 Neoplastic Renal Masses
 - 6.7 **Calculus Disease & Urothelial Lesions**
 - 6.7.1 Calculus Disease
 - 6.7.2 Nephrocalcinosis

- 6.7.3 Urothelial Tumors
- 6.8 **Urinary Obstruction:**
 - 6.8.1 Pathophysiology
 - 6.8.2 Causes of Obstruction
- 6.9 Radiological Evaluation of Urinary Bladder, Prostate & Urethra:
- 6.10 Injuries to the GenitoUrinary Tract:
- 6.11 Renal Failure and Transplantation:
- 6.12 Interventional Uroradiology:
- 6.13 **Imaging of the Kidneys & Urinary Tract in Children**
 - 6.13.1 Embryology
 - 6.13.2 Techniques
 - 6.13.3 Interventional Procedure
- 6.14 **Imaging of Paediatric Pelvis:**
 - 6.14.1 Imaging Techniques
 - 6.14.2 Normal Anatomy
 - 6.14.3 Congenital Anomalies
 - 6.14.4 Pelvis Masses
 - 6.14.5 Scrotal Disease

VII Skeletal System:

- 7.1 Skeletal Trauma
- 7.2 Bone Tumors: General Characteristics & Benign Lesions
- 7.3 Bone Tumors: Malignant Lesions
- 7.4 **Myeloproliferative and Similar Disorders**
 - 7.4.1 Generalised/Localised Decreased in Bone Density
 - 7.4.2 Generalised/Localised Increased in Bone Density
 - 7.4.3 Delayed Skeletal Maturity
- 7.5 Metabolic and Endocrine Disease of the Skeletal
- 7.6 Skeletal Dysplasias and Malformation Syndrome
- 7.7 **Joints Diseases :**
 - 7.7.1 Rheumatoid Arthritis
 - 7.7.2 Other Connective Tissue Disease
 - 7.7.3 Crystal Deposition Arthropathy
 - 7.7.4 Degenerative Joint Disorders/Degenerative spine
 - 7.7.5 Arthrography/ HPOA/ Pachy Dermoperiostitis
- 7.8 Bone and Soft tissue Infection:
- 7.9 Imaging of Soft tissue:
- 7.10 **Bone Tumors in Children:**
 - 7.10.1 Imaging approach
 - 7.10.2 Benign Bone Tumors
 - 7.10.3 Malignant Bone Tumors
- 7.11 The Radiology of Non Accidental Injury in Children:
- 7.12 Paediatric Musculo – Skeletal Trauma
- 7.13 Radiology of Arthritides in Children
- 7.14 Radiology of Soft tissue in Children
- 7.15 Bone and Soft tissue infection in Children

VIII. The Reproductive System:

8.1 Ultrasound in Obstetrics and Gynaecology

- 8.1.1 Indication
- 8.1.2 Instrumentation in US Techniques
- 8.1.3 Gynaecological infertility
- 8.1.4 Assessing Tubal Patency

8.2 Imaging in Gynaecology

- 8.3 Hysterosalpingography
- 8.4 The Breast & its Imaging
- 8.5 Breast Cancer
- 8.6 Male Reproductive System

IX Central Nerve System:

9.1 Skull and Brain: Methods of Examination and Anatomy

9.2 Cranial and Intracranial Pathology: Tumors in Adults

9.3 Cranial and Intracranial Pathology: Cerebro Vascular Disease and Non Traumatic Intracranial Haemorrhage

9.4 Cranial and Intracranial Pathology : Infections, AIDS, Demyelinating and Metabolic Disease

9.5 Cranial and Intracranial Pathology: Trauma, Bone Pathology, CSF Disturbances, Epilepsy

9.6 Spine: Method of Investigation

9.7 Imaging of Spinal Pathology

9.8 Scoliosis in Children

9.9 Neonatal Head and Spine Sonography

9.10 Neurology in Children

X The Orbit; ENT; Face; Teeth :

10.1. The Orbit

- 10.1.1 Anatomy / Techniques
- 10.1.2 Intraocular Abnormalities
- 10.1.3 Lacrimal Gland Tumors
- 10.1.4 Muscular Tumors
- 10.1.5 Intra/Extra Canal Tumors

Ear, Nose and Throat Radiology

10.2.1 The Ear

10.2.2 Nose and Paranasal Sinuses

10.2.3 Pharynx

10.2. Maxillofacial Radiology

10.3.1 Fractures of Maxilla

10.3.2 TM Joint

10.3.3 Salivary Glands

10.3. Dental Radiology

10.4. Paediatrics, Eye & Orbit :

10.5.1 Imaging Techniques

10.5.2 Child with Proptosis or an Orbital mass

10.5.3 Child with Orbital Infection

10.5.4 Child with White Eye

10.5.5 Child with Development Abnormalities

10.5. Paediatric ENT Imaging

B. RADIOLOGICAL PHYSICS & X-RAY TECHNOLOGY :

1. Radiation:
2. Production of X - Rays:
3. X- Ray Generators:
4. Basic Interaction between X- Rays and Matter:
5. Attenuation:
6. Filters:
7. X- Ray beam restrictors:
8. Physical characteristics of X- Ray films & film Processing:
9. Photographic characteristics of X- Ray films:
10. Fluoroscopic imaging and Image Intensifier:
11. Viewing & recording of the Fluoroscopic Image:
12. The Radiographic Image:
13. Geometry of the Radiographic Image:
14. Body section Radiography:
15. Stereoscopy:
16. Xero- Radiography:
17. Computed Tomography:
18. Ultrasound:
19. Digital Radiography:
20. Nuclear Magnetic Resonance:
21. Magnetic Resonance Imaging:
22. Radiation hazards & Protection:
23. Electric hazards & Protection:
24. Cine Angiography:
25. Atomic structure, Radioactive Isotopes & Gamma Camera:
26. Positron Emission Tomography:
27. Digital Subtraction Angiography:
28. Catheters, guides wires, dilators, balloons & stents:
29. Pictorial Archiving & Communicating System (PACS):
30. DICOM:

C. DARK ROOM TECHNIQUES :

1. Layout of Ideal Dark Room : maintenance and its accessories :
2. Developer : ingredients & their action :
3. Developer : exhaustion & methods of determination :
4. Replenisher & rapid development :
5. Fixer : ingredients & their action :
6. Fixer : exhaustion & methods of determination :
7. Effect of temp on standard development /fixing time & methods to maintain it. :
8. Tropical processing :
9. Intensifying screens /construction, types and advantages :

10. Rare earth intensifying screens :
11. Intensification factor :
12. Cassette : construction & care
13. Factors affecting image details :
14. Factors affecting image contrast & density :
15. Grids : construction & types
16. Cones & collimeter :
17. X Ray films - construction, types & storage :
18. Film faults in dark room & their prevention :
19. Film fog :
20. Hangers :
21. Safe light :
22. Automatic developing unit :
23. Day light loading and unloading of films :

MODEL QUESTION PAPER

Paper – I

Basic sciences related to Radiology

(Anatomy, Pathology, Basic and Radiation Physics, Technique and Dark Room processing and apparatus Construction).

Time: 3 Hrs

Maximum 100 marks.

Answer all the questions.

Write briefly on:

(10 X 10 = 100 Marks)

1. Gamma camera.
2. Multidetector CT
3. Image intensifier.
4. Protective measures in diagnostic department.
5. Biological effects of radiation.
6. Developmental anomalies of kidneys
7. Bronchopulmonary segments
8. Imaging anatomy of Sella and Parasellar region
9. Pathology of Tumors of mediastinum
10. Pathological classification of bone tumours

Paper – II

(Central nervous system including Head and Neck, Musculoskeletal, Chest, Mammography, Cardiovascular system)

Time: 3 Hrs

Maximum 100 marks.

Answer all the questions.

1. Describe in detail imaging features of bronchogenic carcinoma. (25 marks)
2. Classify congenital heart diseases and Briefly mention about Imaging features of cyanotic heart diseases. (25 marks)
3. Write short notes on : (10 X 5 = 50 marks)
 - a) Aneurysmal bone cyst
 - b) Thymoma

- c) Mucopolysaccharidoses
- d) Intramedullary mass lesions
- e) Meningioma

Paper – III

(Abdominal, Imaging including Gastro intestinal, Genito urinary, Hepatobiliary, Interventional radiology, obst and Gynae).

Time: 3 Hrs

Maximum 100 marks.

Answer all the questions.

1. Describe in detail imaging features of tumors of the stomach. (25 marks)
2. Describe in detail imaging features of renal hypertension. (25 marks)
3. Write short notes on: (10 X 5 =50 Marks).
 - a) Renal angiography
 - b) Hepatoma
 - c) Ulcerative colitis
 - d) Intrauterine growth retardation
 - e) Polycystic ovaries

DIPLOMA IN TUBERCULOSIS AND CHEST DISEASES (D.T.C.D)

Training Programme (DTCD)

First 6 months (Orientation Programme)

1. Attending PG orientation programme (covering the main teaching methods issues relating to establishing support with the patients. Ethical issues involved in rendering the patient care services)
2. Care of indoor patients under guidance of seniors.
3. Taking case-history, working up indoor cases, writing admission and discharge summaries.
4. Performing Minor –OT procedures in OPD.
5. Attending emergency ad referral calls under the supervision of Senior Resident/Assistant Professor/ Associate Professor/Professor.
6. Attending ward rounds and assisting in carrying out the instructions by senior staff,
7. Attending Our Patient Department patients under the supervision of seniors.
8. Keeping records and maintenance of ward, OPD and emergency statistics.

After 6 months to the end of the course:

1. Presenting indoor patients in ward rounds.
2. Attending OPD patients.
3. Doing emergency duties of 24hr duration by rotation among all residents.
4. Presenting seminars, journal articles cases on rotation basis.
5. Attending Inter-departmental meetings and planning the management.
6. Ensuring proper management of indoor patients and proper record keeping by juniors.
7. Attending medical care review meetings. Central Academic Programmes and other guest-lectures organized by Institute.
8. Taking clinical classes for undergraduate students posted in TB & CD.
9. Maintaining a Log Book.

TEACHING SCHEDULE

CLINICAL POSTINGS:

- | | |
|---------------------------------------|---------|
| • General Medicine | 1 month |
| • Cardiology | 7 days |
| • Cardiovascular and thoracic Surgery | 7 days |
| • Radiodiagnosis | 7 days |
| • Anesthesiology | 7 days |
| • Paediatrics | 7 days |
| • Pulmonary Rehabilitation | 7 days |
| • Social & Preventive Medicine | 7 days |
| • Radiotherapy | 7 days |

- Tuberculosis Research Center (TRC) Chennai 7 days
- National Tuberculosis Institute (NTI) Bangalore 7 days

Afternoon Lectures/ Demonstration Classes in Pre and Para Clinical Sciences during the First year study.

SKILLS

The following skill should be possessed by candidate appearing for Diploma In Tuberculosis and Chest Diseases (DTCD).

Communication skills:

1. Communication skills:

a) Communication with peer Group by way of:

- Case presentation
- Clinico-pathological exercise.
- Seminars & small conferences

b) Communication with students and colleagues:

- Undergraduate teaching
- Demonstrations

c) Research Communication:

- Gathering and compiling data, analysis and presentation, designing a research protocol.
- Writing a structured abstract.

2. Administrative skills:

a) Stores and equipment

- Knowledge about requirements, estimation of cost and expenditure of equipment and store.
- Procurement and maintenance.

b) Knowledge about essential National Health Programmes.

3. Practical and procedural skills

a) General skills

b) Specific skills in Respiratory Medicine

GENERAL SKILLS

- General Medicine: History taking Methodological clinical examination, fundus examination, liver biopsy, L. P. sternapuncture for bone-marrow examination, catheterization and bedside investigations.
- Cardiology: Interpretation of ECG in relation to respiratory diseases, ECHO, usage of Defibrillator.
- Radiology: X-ray reading, positioning, fluoroscopy, bariumswallow, bronchography, CT scan and Ultra Sonography.
- Optional: MRI Lung Scan and Pulmonary-angiography.
 - ENT, Anaesthesiology: Intubation, Tracheostomy, Transtracheal aspiration, Sinus examination.
 - Paediatric Pulmonary diseases: Fluid and electrolyte balance in children.
 - Cardiovascular and Thoracic Surgery: Bronchoscopy, Pulmonary resection, post-operative care and pre-operative evaluation.
- These skills are acquired by the candidates by working in parent and allied departments.

SPECIFIC SKILLS IN RESPIRATORY MEDICINE

1. Skill to perform diagnostic tests:
 - Sputum examination with ZN stain, examination of the body fluids for AFB and malignant cells.
 - FNAC
 - Evaluation of diagnostic tests
 - Sleep lab and sleep clinic
 - Exercise testing
 - Respiratory muscle function tests
 - Pulmonary function test
 - BCG Vaccination
 - Mantoux testing
2. Therapeutic Procedures:
 - Thoracocentesis
 - Tube Thoracostomy
 - Rehabilitation exercise
 - Bronchoscopy aspiration and lavage
 - Pleural biopsy
 - Critical care
 - Management issues and basic nursing and asepsis, cross infection and iatrogenic problems.
 - Life support system management.
 - Principles of total parenteral (TPN) nutrition.

Apart from these skills, the candidate should possess skill for rapid diagnosis and decision making which is useful in outpatient department and as a part of inpatient management he/she should have the following skills.

- Case sheet writing, clinical examination, diagnosis, investigation and management.
- Presenting cases.
- Problem based approach towards day- to day management
- Bedside diagnostic and therapeutic procedures
- Minor surgical procedures
- Rehabilitation

EVALUATION

CONTINUOUS OR PERIODIC EVALUATION DURING THE COURSE

This evaluation of the candidate should be earned out every month and the knowledge assessed by:

- Short question and answer supplemented by viva-voce.
- Ward round question answers practical skills
- Direct supervision and observation of procedures like bronchoscopy, pleural biopsy. Endotracheal intubation.
- Checking the log book.
- Regularity in attendance.

COMMUNICATION SKILLS

- Objective assessment of clinical presentation, seminars and case discussions'
- Dealing with patients, relatives and paramedicals
- Feedback from patients

CERTIFYING THE PROFICIENCY IN THE SKILLS

For Diploma in Tuberculosis and Chest Diseases (DTCD)

This is done by theory examination consisting of 3 papers of 100 marks each. Theory question papers consist of short answer and long answer questions. This weight age is 50%. The other 50% will have 200 marks for clinical and 100 marks for viva/ practical. The candidate should pass independently all categories under the same set of examiners.

Papers – I

Basic Sciences as applied to Pulmonary Medicine

Format for paper – I

- 10 Short Questions each 10 marks

Applied Basic Sciences approximately 60% weight age on Anatomy and Physiology and 40% on other applied basic sciences related to Tuberculosis and Respiratory Diseases.

Format for Paper II & III

- 2 Long questions of 25 marks each
- 5 short answer questions of 10 marks each

Paper II Tuberculosis (Pulmonary and extra pulmonary including recent advances)

Paper III Non-Tuberculosis chest Diseases including recent advances and air pollution.

CLINICAL EXAMINATIONS

- | | |
|---|----------|
| 1. Long case | 80 marks |
| Distribution of marks | |
| History taking | 20% |
| Clinical Exam | 20% |
| Diagnosis & Differential diagnosis | 20% |
| Choice of investigations | 20% |
| Discussion | 20% |
| 2. Short cases | 25 marks |
| Practical examination | |
| 1. Spot slides and spotters | |
| 2. X-ray films | |
| 3. Specimen | |
| 4. ECG/ABG/Polysomnography | |
| 5. Instruments | |
| 6. PFT Interpretation | |
| 7. Bronchoscopy findings & Interpretation | |
| Viva examination should include | 25 marks |
| 1. Recent advances | |
| 2. Research work done | |
| 3. Image techniques | |
| 4. Acute emergencies | |

Eligibility for Pass

- The candidate should obtain a minimum of 50% marks in theory, Clinical, Practical and Viva voce separately. (In addition, in each Theory paper a candidate has to secure minimum of 40%. If any candidate fails even under one head, he/she has to reappear for both Theory and Practical / clinical / Viva examinations.

Examiners

1. There shall be four examiners (PG teachers) – Two internals and two externals. Two internal examiners shall be from the same University/Institution. One of the internal examiners will act as Chairman/convenor as per instructions from University. Two external examiners shall be from different Universities.
2. All the examiners must be full-time PG teachers with requisite experience as per MCI guidelines.

Annexure II – Model question papers for Diploma in Tuberculosis and Chest Diseases (DTCD)

Annexure II – List of Recommended Books and Journals for both MD and DTCD

PAPER – I

1. An Architecture for Physiological Function
 - Development, ultra structure and Anatomy of Respiratory tract and Lungs.
 - Embryology of lungs, heart, mediastinum and diaphragm.
 - Development anomalies
 - Surgical and endoscopic and applied Anatomy of chest and neck including Lymphatic drainage.
 - Radiographic Anatomy (plain skiagram, CT, MRI, Ultrasound etc.)
2. Physiological Principles
 - Control of Ventilation and role of peripheral and central Chemoreceptors & pulmonary mechanics.
 - Ventilation, pulmonary Blood Flow, Gas Exchange, Blood Gas Transport and assessment of pulmonary functions.
 - Non-respiratory immunological and endocrine functions of lung.
 - Inhalation kinetics and its implication in aerosol therapy, sputum induction etc.

- Acid-base and electrolyte balance.
3. Approach to the Patient with Respiratory signs and symptoms
- Basic signs and symptoms of lung diseases
 - Pathogenesis, evaluation of dysnoea and abnormal breathing patterns.
 - Pulmonary manifestations of systemic diseases.
4. Diagnostic Procedures
- Trache Bronchial Secretion/Transbronchial Aspirations
 - Bronchoscopy and related Procedures
 - Radiographic Evaluation of the Chest and Computer Tomography and MRI
 - Gram's stain, Zeihl-Neelsen stain for AFB, Fluorescent Microscopy, fungus Stain, Gomori stain for p. carini.
 - Immunological Tests including Mantoux.
 - Polymerase chain reaction, D. N. A. probe, Bactec tests.
 - Thoracocentesis, Biopsy FNAC/FNAB
 - Spirometry, ABG, Diffusion studies

PAPER – II

1. Mycobacterial diseases of the Lungs
- Epidemiology, Microbiology and Prevention of Tuberculosis
 - Pathogenesis of Pulmonary Tuberculosis and clinical Manifestations and diagnosis of Mycobacterial Disease
 - Diseases caused by Mycobacteria other than Mycobacterium Tuberculosis
 - Treatment of Mycobacterial Diseases of the Lungs caused by Mycobacterium Tuberculosis
 - RNTCP
 - Treatment of pulmonary tuberculosis in hepatic renal and endocrine disorders and in pregnancy.
 - Multidrug resistant tuberculosis
 - AIDS & tuberculosis
 - Chemoprophylaxes

PAPER – III

1. Immunological Disorders

- Immune defenses of the lung and Cellular Communication in Respiration Immunity.
- Sarcoidosis
- Hypersensitivity Pneumonitis and Pulmonary Manifestations of Collagen Vascular Diseases.
- Eosinophilic Pneumonias and Tropical eosinophilia
- Granuloma like Wegener's, Churg Strauss etc.

2. Interstitial Diseases

- Reactions of the Interstitial Space to injury
- Pulmonary Fibrosis
- Occupational and Environmental Pulmonary Diseases.

3. Non-infection disorders of the pulmonary Parenchyma

- Aspiration and inhalational (non-Occupational) Disease of the Lung
- Pulmonary Edema
- Drug induced pulmonary diseases

4. Pulmonary circulatory disorders

- Pulmonary Hypertension and Cor Pulmonale
- Pulmonary thromboembolic Disease.

5. Obstructive diseases of the lungs

- Asthma Epidemiology, General Features, Pathogenesis, Pathophysiology and therapeutic modalities Chronic Obstructive Pulmonary Diseases.
- Immunotherapy
- Long term Oxygen therapy
- Inhalation therapy
- Cystic Fibrosis
- Pulmonary Rehabilitation
- Acute Bronchitis and Bronchiolitis Obliterans
- Upper airway obstruction
- Bronchiolitis Obliterans organizing Pneumonia (BOOP)

6. Hypoventilation Syndromes and sleep disorders

- Disorders of Alveolar Ventilation
- Sleep Apnea Syndrome
- Obesity

7. Non - Tuberculosis Infections of the Lungs General aspects

- Approach to patient with Pulmonary Infections
- Nosocomial Pneumonia
- Systemic Infection and the Lungs

8. Non – Tuberculosis infections of the lungs specific disorders

- Pneumonias caused by Gram-Positive Bacteria, Gram Negative Aerobic- Organisms and Anaerobic Organisms and Anaerobic infections of the Pleura
- Unusual Bacterial Pneumonia including viral or rickettsial
- Community Acquired Pneumonia
- Bronchiectasis

9. Cancer of the lungs

- Biology of the lung cancer, small cell and non small cell
- Epidemiology, Pathology, Natural History and Clinical Picture of the Carcinoma of the Lung.
- Diagnostic Approach of Pulmonary Nodules
- Small Cell Lung Cancer
- Medical Management and Surgical Treatment of Non-small Cell Lung Cancer and Paraneoplastic syndrome
- Radiation Therapy in the Management of the Carcinoma of the Lung
- Benign and malignant Neoplasms of the Lung other than Bronchogenic Carcinoma and thymic and neuro fibromatous tumors, Neoplasms of the Pleura, Chest Wall and diaphragm
- Prevention of Neoplasia

10. Diseases of the Mediastinum

- Non-neoplastic disorders of the Mediastinum
- Primary Neoplasms and cysts of the Mediastinum

11. Disorders of the Pleura

- Pleural Dynamics and Effusions
- Non neoplastic and Neoplastic Pleural Effusions
- Pneumothorax
- Pyothorax and Broncho-pleural; fistula
- Pleural thickening, fibrosis and calcification

12. Acute Respiratory Failure

- Acute Respiratory failure: Introduction and Overview
- Adult Respiratory Distress Syndrome: Clinical Features, Pathogenesis, Sequential Morphological changes and Management
- Acute Respiratory failure in the patient with Obstructive Airways Disease
- Respiratory Muscles and clinical Implications of Respiratory Muscle Fatigue
- Oxygen Therapy
- Mechanical ventilation

13. Surgical Aspects of Chest Medicine

- Pre – and Post – operative evaluation AND Management of Thoracic Surgical patient.
- Chest Trauma /Trauma related lung dysfunction
- Lung Transplantation

14. Practical Assessment of Pulmonary performance

- Pulmonary function test and its Interpretations in Determining the Disability
- Spirometry, compliance , resistance, lung volume, diffusions
- Blood gas analysis
- Cardiopulmonary exercise testing
- Bronchoprovocation tests

15. Occupational Lung disorders

- Organic and inorganic dust exposure and their effects
- Environmental dust measurements, radiation and lung, occupational asthma and occupational cancer.

16. Miscellaneous

- Effects and Hazards of smoking and passive smoking and its prevention in individual and community

- Demonstration and use of equipments (Ventilator, Bronchoscope, Capnography, Pulse-oxymeter etc.)

DIPLOMA IN TUBERCULOSIS AND CHEST DISEASES (DTCD) EXAMINATION

Paper – 1 : BASIC SCIENCES AS APPLIED TO PULMONARY MEDICINE

Time : Three Hours

Maximum: 100 Marks

ANSWER ALL QUESTIONS: DRAW SUITABLE DIAGRAMS WHEREVER NECESSARY

Write Short notes on:

- Anterior Mediastinum
- High Altitude Pulmonary edema
- Deep Sulcus sign
- Clarithromycin
- Respiratory acidosis
- Preoperative Pulmonary evaluation.
- Dynamic hyperinflation.
- Surfactant
- Closing Volume
- Kveim Test.

DIPLOMA IN TUBERCULOSIS AND CHEST DISEASES (DTCD) EXAMINATION

Paper II: PULMONARY AND EXTRAPULMONARY including RECENT ADVANCES

Time 3 hours

Maximum: 100 marks

Answer All Questions: Draw Suitable Diagrams Wherever Necessary

- Describe the clinical features and management of Tuberculosis meningitis.
(25 marks)
- How will you diagnose MDR-TB ? Write recent Concepts in the treatment of MDR-TB.
(25 marks)
 - Runyan's Classification.
 - Wallgren's Time Table
 - Brocks' syndrome
 - Erythema Nodosum,
 - BCG Vaccination.

DIPLOMA IN TUBERCULOSIS AND CHEST DISEASES (DTCD) EXAMINATION

Paper – III NONTUBERCULOUS CHEST DISEASES including RECENT ADVANCES AND AIR POLLUTION.

Time 3 hours

Maximum: 100 marks

ANSWER ALL QUESTIONS: DRAW SUITABLE DIAGRAMS WHEREVER NECESSARY

1. Describe non-cardiogenic pulmonary oedema and its management. (25 marks)
2. Classify pneumonia, Describe the clinical features and management of community acquired pneumonia ? (25 marks)
3. Write Short Notes on:
 - a) PIOPED
 - b) Modified Light's criteria
 - c) Loffler's syndrome
 - d) Eaton – Lambert syndrome
 - e) N-Acetyl Cysteine. (10 marks each)

Recommended Books

S.No.	Name of the Books	Name of the Author & Publication
1.	Respiratory Diseases	Crofton & Douglas
2.	Tuberculosis	S. Sharma, Latest
3.	Principles of Chest X-ray Diagnosis	Simon Latest
4.	Diagnosis of Diseases of Chest	Fraser - Latest
5.	Murray a Nadal Text Book of Respiratory Diseases	Magon - Latest
6.	Tuberculosis Management	Toman - Latest
7.	Respiratory Care Anatomy and Physiology	Bachet
8.	Felsons Chest Roentgenology	
9.	Management of Mechanically Ventillated patients	Pierce
10.	Imaging of Chest – 2 Volumes	Silvan Mullar
11.	TB Handbook	WHO
12.	Physical Diagnosis	Wakil Golwalla
13.	Macleoss Clinical Examination	
14.	Asthma and COPD	Peter Barnes
15.	Tuberculosis	ROM and Garay
16.	Textbook of Pleural Diseases	Light
17.	Diffuse Lung Disorders	Sperber
18.	Fundamental of Respiratory Care	Egan
19.	Atlas of procedures in Respiratory Medicine	Murray & Nadal
20.	Computerised Tomography and Magnetic Resonance of Thorax	Nadich
21.	Principles and Practicals od Medicine	Davidson
22.	Harrisons Principles of Internal Medicine	
23.	Practical Approach to Critical Respiratory Medicine	Arora (Sleep disorders and Fibre Optic Bronutoscopy)
24.	Pulmonary Rehabilitation	Fishman

Print Journals

S.No.	Name of the Books
1.	Chest
2.	Indian Journal of Lung Disease and Tuberculosis
3.	International Journal of Lung Disease and Tuberculosis
4.	Indian Journal of Tuberculosis
5.	British Medical Journal
6.	Lancet

On Line Journals

S.No.	Name of the Books
1.	Sleep Medicine Reviews
2.	Thorax
3.	Journal of Bronutology
4.	Clinics in Chest Medicine
5.	Journal of Allergy and Clinical Immunology

DIPLOMA IN OBSTETRICS & GYNAECOLOGY

CURRICULUM FOR DIPLOMA COURSE IN OBSTETRICS & GYNAECOLOGY (D. G. O.)

1. Departmental Objectives
2. Contents
3. Recommended Reading
4. Evaluation

INTRODUCTION

At the end of the 2 years Postgraduate course, the resident will be expected to work as a specialist in the field of Obstetrics & Gynaecology, particularly meeting the needs in the peripheral regions. This will require thorough knowledge of the fundamental, particularly in Obstetrics. He/she should be reasonably acquainted with basic gynaecological conditions and procedures. He/she should be able to make decisions regarding patient management and adopt favourable ethical attitudes.

1. Departmental Objectives

A postgraduate resident should be able to achieve objectives in the following domains:-

A. Cognitive Domain

1. Learn the basics of the subjects of Obstetrics and Gynaecology covering all conditions likely to be met with in Obstetric practice in our country.
2. Provide effective prenatal care depending on the clinical condition of the mother, including nutrition, immunization and risk assessment.
3. Able to diagnose and manage normal pregnancy, Labour and puerperium and recognise any departure from normal in the above.
4. Learn in greater detail about common problems like hypertension complicating pregnancy.
5. Appreciate the indications and methods of induction of labour.
6. Gain knowledge of other branches of medicine which are relevant to Obstetrics and Gynaecology with special stress on Diabetes mellitus, Hypertension, cardiac Disease, Anaemia, Lower urinary tract disorders and surgical causes of abortion, spontaneous and induced, including ectopic gestation and hydatidiform mole.
7. Able to competently manage cases of abortion, spontaneous and induced, including ectopic gestation and hydatidiform mole.
8. Diagnose and manage preterm labour.
9. Assess clinically the fetal well being, maturity and birth weight and to use that information in deciding the obstetric management.
10. Develop decision making skills by utilizing the clinical and laboratory data.

11. Able to diagnose and manage acute abdomen, haemorrhage and other emergencies i.e. eclampsia.
12. Understand the need for common obstetric operative interventions i.e. episiotomy, forceps, ventouse, Caesarean section, dilatation and evacuation etc.
13. Understand the importance of population control, contraception and different methods of contraception.
14. Understand the physiology of menstruation and manage common menstrual abnormalities.
15. Identify common adolescent and paediatric gynecological problems and their management.
16. Learn about screening and diagnosis of gynaecological operative procedures.
17. Acquaint oneself with common basic gynecological operative procedures.
18. Learn about screening and diagnosis of gynaecological malignancies including breast.
19. Acquaint oneself with common basic gynecological operative procedures.
20. Learn the proper method of handling data and resending statistics in a scientific and orderly fashion in seminars, symposia and papers.
21. Utilise journals and reference works effectively.

B. Affective Domain

1. Appreciate the fact that women and children are especially a vulnerable group as regards health problems.
2. Appreciate particularly the problem of patients of advanced and terminal disease and to develop a sympathetic attitude to them and their relatives.
3. Understand the psychological aspects of gynecologic diseases in general and in=fertility and unwanted pregnancy in particular.
4. Develop the ability to view the patients condition ion a wider social perspective and to adjust therapy to suit her social and financial reality.
5. Understand the importance of good medical care in preventing most of the morbidity and mortality in Obstetrics and Gynaecology.
6. Develop skills to communicate with patients and their relatives and to elicit a thorough history and developing a rapport with the patients.
7. Understand that Obstetrics and Gynaecology forms a hotbed for ethical issues and follow necessary precautions needed for an ethical practice.

C. Psychomotor Domain

1. Able to select cases for the following Obstetric procedures and able to perform them independently and confidently:-
 - i) Lower segment caesarean section including cases of obstructed labour and malpresentations.
 - ii) Outlet and low forceps delivery.
 - iii) Vacuum extraction.

- iv) Assisted Breech Delivery.
 - v) External cephalic / internal podalic version.
 - vi) Manual removal of placenta and exploration of uterine cavity.
 - vii) Management of atonic and traumatic Post Partum Haemorrhage.
2. Able to select cases for the following Obstetric procedures and able to perform them independently and confidently:-
- i) Suction Evacuation/MVA
 - ii) Dilation and Evacuation
 - iii) Extra amniotic instillations & other newer methods like medical abortion.
3. Able to perform the following gynaecological surgical procedures:-
- i) D & C / FC, Menstrual Regulation
 - ii) Polypectomy
 - iii) Insert and remove IUCD
4. Able to assist / perform the following gynaecological surgical procedures:-
- i) Minilap tubectomy
 - ii) Vaginal Hysterectomy with pelvic floor repair
 - iii) Abdominal Hysterectomy for 'Straight-forward' cases
 - iv) Salpingectomy for ectopic pregnancy, Salpingo-ovariotomy.
 - v) Amputation of Cx/Manchester repair/Conisation
5. Able to assist in the following:
- i) Laparoscopic sterilization
 - ii) Diagnostic Laparoscopy
 - iii) Colpocentesis /colpotomy, laparotomy & drainage of pus
 - iv) Caesarean Hysterectomy
 - v) Repair of bladder injury
 - vi) Hysterectomy in 'difficult cases'
 - vii) Tubal microsurgery
6. Able to manage the intra-operative and post-operative complications.
7. Able to perform the following investigations:-
- i) Obstetric Ultrasonography for – Pregnancy diagnosis
 - Pregnancy dating
 - Early pregnancy bleeding
 - Antepartum Haemorrhage
 - Biophysical profile
 - Fetal anomalies
 - ii) Hysterosalpingography
8. Able to assist the following investigations:

- i) Colposcopy
 - ii) Cystoscopy
 - iii) Gynaecological USG for adnexal mass, uterine pathology and follicular monitoring.
9. Able to resuscitate an asphyxiated newborn by emergency measures and recognize signs requiring referral of a baby for specialized care.

2. CONTENTS

OBSTETRICS

Must Know

1. Obstetrics – Aims and vital statistics
2. Embryology – applied – Fertilisation, Implantation and fetal development
3. Morphological and functioning development of fetus
4. Maternal adaptation to pregnancy
5. Management of normal pregnancy
 - Perinatal care
 - Techniques to evaluate fetal growth and health
 - Conduct of normal labor and delivery
 - Labour Analgesia and Anaesthesia
6. Management of labour
 - The normal pelvis
 - Attitude, Lie, Presentation and position of the fetus
 - Parturition : Biomolecular and Physiologic processes
 - Mechanisms of Normal labor
 - The Newborn infant
 - The Puerperium
7. Complications of pregnancy
 - Abortion, gestational trophoblastic disease
 - Ectopic pregnancy
 - Diseases and abnormalities of the placenta and fetal membranes
 - Congenital malformations and inherited disorders
 - Diseases, Infections and Injuries of the fetus and newborn infant
 - Multifoetal pregnancy
 - Hypertensive Disorders in Pregnancy including eclampsia
 - Obstetrical Haemorrhage
 - Abnormalities of the Reproductive Tract
 - Preterm and postterm pregnancy and inappropriate foetal growth.
8. Abnormal labour
 - Dystocia due to abnormalities of the expulsive forces and precipitate labour
 - Dystocia due to abnormalities in presentation, position and development of the fetus
 - Dystocia due to pelvic contraction
 - Dystocia due to soft tissue abnormalities of the Reproductive Tract
 - Techniques for Breech Delivery and occipito posterior
 - Injuries to the Birth canal – Perineal tears, cervical / vaginal lacerations, rupture uterus
 - Abnormalities of the third stage of labour.

9. Operative Obstetrics:

1. Forceps / vacuum delivery and related techniques.
2. Caesarian Section and Caesarian Hysterectomy.

10. Abnormalities of the Puerperium

11. Medical, surgical illness complicating pregnancy.
12. Family welfare including Post Partum programme.
13. Other National programmes applicable to Obst. & Gynae.
14. Drugs in pregnancy.
15. Current concepts in the management of preterm labour.
16. Conservative management of Ectopic gestation.
17. Ante Partum monitoring of fetus at risk.
18. Imaging in Obstetrics.
19. Medico legal aspects pertaining to obst. & gyn.

Desirable to know:

1. Chromosomal abnormalities in the fetus and genetic counseling.
2. Immunology of recurrent abortiuons and other Obst. Complications.
3. Destructive operations.

GYNAECOLOGY

Must know

1. Anatomy and embryology of female reproductive tract.
2. Ovarian function and physiology of menstruation.
3. Disorders of breast.
4. Malformations and maldevelopment of female genital tract.
5. Sex determination, asexuality and intersexuality.
6. Injuries to female urogenital tract.
7. Genital prolapsed.
8. Other displacements of the uterus.
9. Torsion of the pelvic organs.
10. Infections.
11. Epithelial abnormalities of the genital tract.
12. Endometriosis and allied states.
13. Trophoblastic tumours.
14. Tumours of the cervix uteri
15. Tumours of the corpus uteri
16. Tumours of the ovary.
17. Genital cancer screening & prevention.
18. Amenorrhoea, Scanty and infrequent
19. Abnormal uterine bleeding, DUB
20. Dysmenorrhoea
21. Vaginal discharge, sexually transmitted infections.
22. Pruritus vulvae

23. Low Backache
24. Problems of sex and marriage.
25. Infertility and subfertility.
26. Contraception – Sterilization, termination of pregnancy.
27. Urinary problems in Gynaecology
28. Hormone therapy.
29. Preoperative and postoperative management, postoperative complications.
30. Advancers in the diagnosis and management of urinary incontinence.
31. Radiotherapy & chemotherapy in Gyn. Cancer.
32. Hormone Replacement Therapy.

Desirable to know:

1. Immunology and Immunotherapy of gynaecological cancers.
2. Assisted reproduction techniques Endometrial ablation and other conservative surgeries in Gyn.
3. Role of GnRH analogues in Gynaecology
4. Tumours of the vulva
5. Tumours of the vagina
6. New approaches to male and female cointraception.
7. Laparoscopic surgery.

3. RECOMMENDED READING

A. BOOKS

Williams Obstetrics – FG Cunningham et al 22 nd Edn. – McGraw – Hill	2005
Practical Guide to High risk pregnancy & delivery Fernando Arias – 3 rd Edn – Daftary.	2008
Turnbull’s Obstetrics 3 rd Edn. – Geoffrey Chamberlain – Churchill Livingstone Harcourt Publishers – 2001.	2001
Mudaliar & Menon’s Clinical Obs. – 10 th Edn. – Orient Longman.	2005
Manual of Obs. – Shirishs Daftary & Sudip Chakravarti – 2 nd Edn. – Elsevier	2005
High risk pregnancy – Management Options – 3 rd Edn. – James, Steer, Weiner, Gonik – Elsevier	2006.
Medical Disorders in Obst, Practice – 4 th Edn – Michael de Swiet – Blackwell	2002
Practical Obstetrics problems (Ian Donald – 5 th Edn – BI Pub. Pvt. Ltd. Delhi	1998
Munrookerr’s Operative Obstetrics – 10 th Edn – Balliere Tindall UK – AIRBS Delhi	2000
Danforth’s Obstetrics & Gynaecology – 9 th Edn. – 2003 Lippincott Williams and Wilkins.	2003.
Shaw’s Text Book of Gynaecology – 13 th Edn – Elsevier	2004
Shaw’s Text Book of Opeative Gynaecology – 6 th Edn. – Elsevier	2004
Jeffcoate,s principles of Gynaecology – International Edn – Arnold	2001
Te Linde’s Operative gynaecology – 9 th Edn. – Lippincott	2003
Berek & Novak’s Gynaecology – 14 th Edn. – Lippincott	2007
Clinical Gynaecologic Endocrinology and infertility – 7 th Edn. Speroff & Fritz, Lippincott	2005
Recent Advances in Obst. & Gynaecology. Bonner J: 23, Harcourt Publishers	

Progress in Obst. & Gynaecology, Studd, 17 Elsevier	
Obstetrics & gynaecology for postgraduates (Vol.1) – Orient Longman (Ratnam, SS Raso, BK Arulkumaran)	2001
Clinical methods in Obsat. & Gynaecology – a problem based approach – 2 nd Ed. Orient Longman	2007
Clinical Gynaecologic Oncology : Disaia JP, Craftsman TM, 5 th Edn. The CV Mosby Co. 1989	1997

- Latest Editions of the above Books are recommended.

B. JOURNALS

- Journal of Obst. & Gyn. India.
- British Journal of Obst. & Gynaecology
- American Journal of Obstetrics & Gynaecology
- International Journal of Obst. & Gynaecology
- Obstetrics & Gyn. Survey
- Obstetric & Gyn. Clinics of N. America.

TEACHING / LEARNING METHODS.

- Seminars /Symposia
 - Journal clubs
 - Group Discussions
 - Clinical rounds / combined case discussions.
 - Case presentations /Bedside teaching
 - Maternal care Review meetings
 - Perinatal meetings
 - Clinicopathological meetings
 - Attending conferences, Workshops CME programmes etc.
- A) Active involvement in patient care in
- Antenatal clinic
 - General Gynae – OPD
 - Postnatal clinic
 - Infertility clinic etc.
- B) Operation Theatre
- Assist procedures
 - Operation under supervision
 - Operate independently as per above
 - Emergencies – Participation in Management
 - In the community – visits to RHC / CAMPS

POSTINGS:

- There should be rotation amongst all units at least once
- Labour room posting – 4 months (minimum)
- Obst. Ward – 12 months

4. Gynaec ward – 6 months
5. Family Planning – 1 month
6. Peripheral postings:
 - Neonatology: 2 weeks
 - Anesthesiology: 2 weeks.
7. Optional – Reproductive medicine: 1 week.

4.EVALUATION

1. Internal assessment book
 - a) Regularity / Attendance- Case sheet writing
 - b) Punctuality
 - c) Attitude
 - d) Operative skill
 - e) Clinical acumen
 - f) Operations - Observed
 - g) Assisted
 - h) Done
 - i) Presenting cases, Seminars
 - j) Attending Conferences, Workshops, CMEs
2. Periodic evaluation
 - Every 6 month /1 year
 - Written
 - Clinical
 - Oral
3. Scheme for theory, clinical and oral examination

Theory (300marks)

At the end of 2 years there will be a written examination on 3 papers, 100 marks each (total 300 marks).

 - Paper- I: Basic Sciences
 - Paper- II: Obstetrics and New Born
 - Paper- III: Gynecology and contraception

Paper- I will have 10 short notes and will carry 10 marks each (10X10=100marks)

Paper –II and Paper – II will have 2 essay questions and 5 short notes. Each essay question will carry 25 marks (2X 25=50marks) and each short notes will carry 10 marks (5X10=50marks)

Clinical (200 marks)

 1. Obstetrics : 100marks
 - One long case- 100 marks
 2. Gynecology : 100 marks
 - One long case- 100 marks

Orals (100 marks)

 - a) Obstetrics and gynecology general viva: 40 marks

- b) Dummy & pelvis, Contraception, X-ray / USG, Specimens / instruments, FHR tracing or partogram / Gravidiogram tracing : 40 marks
- c) Five spots : 20 marks

Criteria for pass: A candidate should obtain 50% in clinical examination (100 out of 200) separately and 50% in (theory + oral) put together (200 out of 400). On the whole a candidate should obtain 300 marks out of 600 marks. A candidate CAN NOT PASS even if he/she obtains a total of 300 marks unless separately 50% in clinics & 50% in (theory + oral) are obtained.

Model Question papers

Paper- I: Basic Sciences

Duration 3 hours

Marks- 10X10=100

Answer all questions

- a) Surgical anatomy of pelvic floor and its clinical significance
- b) Describe the course of ureter and its surgical importance.
- c) Physiology of micturition in female and pathophysiology of genuine stress incontinence.
- d) Feto-placental circulation.
- e) Ovarian steroidogenesis.
- f) Iron metabolism.
- g) Calcium channel blockers and its use in obstetrics.
- h) Cervical intraepithelial neoplasia.
- i) Organism implicated in puerperal sepsis.
- j) Asymptomatic bacteriuria.

Paper- II: Obstetrics and New Born

Duration 3 hours

Marks- 100

Answer all questions

1. Discuss the aetiopathology and management of severe pre-eclampsia. (25 marks)
2. List the causes of breech presentation and factors determining perinatal outcome in breech presentation. Discuss the merits and demerits of planned caesarean section in breech presentation. (25 marks)
3. Write short notes on (5X 10= 50 marks)
 - a) Diagnosis of pregnancy
 - b) Care of a growth restricted newborn.
 - c) Biophysical profile.
 - d) Predisposing factors and prevention of Postpartum Haemorrhage
 - e) Reproductive Child Health Programme

Paper- III: Gynecology and Contraception

Duration 3 hours

Marks- 100

Answer all questions

1. Discuss the clinical features and management of endometriosis. (25 marks)
2. Discuss the management of early stage carcinoma cervix. (25 marks)
3. Write short notes on (5X 10= 50 marks)
 - a) Hyperprolactinaemia
 - b) Tubal patency tests
 - c) Barrier contraceptives
 - d) No scalpel vasectomy
 - e) Treatment of vault prolapsed.