

Syllabus passed in BOS meeting on 18/11/2016 & by Faculty on 19/11/2016.
Approved by Academic Council vide Resolution 127/2016 dated 19/12/2016
From Academic Year 2017-18 subject to Uniformity in the University
Examination system.



MAHARASHTRA UNIVERSITY OF HEALTH SCIENCES, NASHIK

Syllabus

(POST GRADUATE)

FACULTY – MEDICAL

MD GERIATRICS MEDICINE

M.D GERIATRIC MEDICINE
SYLLABUS IN GERIATRIC MEDICINE
PAPER I

BASIC SCIENCES, FLUID AND ELECTROLYTE DISTURBANCES AND ACID- BASE balance , CARDIOVASCULAR SYSTEM, RESPIRATORY SYSTEM, HAEMATOLOGY, NEPHROLOGY

INTRODUCTION TO CLINICAL MEDICINE:

- Headache
- Chest pain
- Chills and Fever
- Lassitude and Asthenia
- Cough
- Dyspnoea and palpitation
- Nausea and Vomiting
- Dysphagia
- Ascites
- Weakness, Tremor, Chorea, Athetosis
- Dizziness, Disorders of Sensation, Convulsions

DISTURBANCES IN ELECTROLYTE, WATER AND MINERAL METABOLISM:

- Hyper and Hyponatremia.
- Hyper and Hypokalemia.
- Calcium and Magnesium metabolism.
- Disturbances In H-ion concentration .
- Disorders of Sodium. Potassium, Calcium, Magnesium and Zinc
- Disturbances of Fluid Metabolism
- Hyperpyrexia / Heat Stroke
- Trace elements and Vitamins

DISEASES OF THE CARDIOVASCULAR SYSTEM:

- Cardiac Arrhythmias
- Cardiac Failure
- Valvular Heart Disease
- Ischemic Heart Disease
- Pericardial Disease
- Cardiomyopathies
- Myocarditis
- Cor Pulmonale
- Atherosclerosis
- Hypertension
- Diseases of the Aorta
- Peripheral Vascular Disease
- Rheumatic heart disease

DISEASES OF THE RESPIRATORY SYSTEM:

- Diseases of the Upper Respiratory Tract
- Bronchial Asthma
- Infections (community acquired,nosocomial,VAPP)
- COPD
- Neoplasms of Lung
- Diseases of Pleura, Mediastinum and Diaphragm
- Respiratory Failure

DISEASES OF THE KIDNEY AND URINARY SYSTEM:

- Acute Renal Failure
- Chronic Kidney Disease
- Glomerulonephritis
- Nephrotic syndrome
- Vascular diseases of the Kidney
- Infections of the Urinary Tract
- Obstructive Uropathy
- Urinary Incontinence
- Nephrolithiasis

DISEASES OF BLOOD AND BLOOD FORMING ORGANS:

- Blood formation and destruction
- Anaemia
- Bone Marrow Failure
- Blood Groups and Blood Transfusion
- Myeloproliferative disorders
- Abnormal Haemoglobins
- Disorders of platelets
- Haemorrhagic disorders
- Leukaemia
- Lymphomas
- Diseases of Spleen and Reticulo-endothelial system

Changes with Ageing

Paraproteinaemia

- Myelodysplastic syndromes
- Disorders of Haemostasis

CARDIOVASCULAR SYSTEM:

- Physiology and Pathology of Cardiovascular system in old age
- Investigation of Heart Diseases in Old age
- Cardiac Arrhythmias
- Coronary Artery Disease and Acute Myocardial Infarction
- Hypertension and Hypertensive Heart Disease
- Postural Hypotension
- Valvular Heart Disease
- Cor Pulmonale
- Chronic Congestive Heart Failure
- Aortic aneurysm
- Bacterial Endocarditis
- Peripheral Vascular Disease
- Deep Venous Thrombosis and Pulmonary Embolism

GENITOURINARY SYSTEM:

- Structural changes with aging
- Acute and Chronic Renal Failure
- Infections of the Genito Urinary Tract
- Diseases of the Bladder and Prostate
- Urinary Incontinence
- Aging changes in the Genital Tract
- Post Menopausal Bleeding
- Gynaecological disorders in the Elderly

RESPIRATORY SYSTEM:

- Changes with Age
- Infections of the Respiratory System
- Chronic Obstructive Airway Disease
- Bronchial Asthma
- Bronchogenic carcinoma
- Respiratory Abnormalities in Extra-pulmonary conditions
- Respiratory Failure

•

DERMATOLOGY

- The Ageing Skin
- Pruritus
- Cancers / Benign Lesions
- Pemphigus & Pemphigoid
- Senile Purpura
- Herpes Zoster
- Intertrigo
- Leg Ulcer
- Hansen's Disease

M.D GERIATRIC MEDICINE**PAPER II****SYLLABUS IN GERIATRIC MEDICINE**

(G.I.system,liver,endocrine,nervous system

DISEASES OF THE GASTROINTESTINAL SYSTEM,nervous system, endocrinology, skin)

- Stomatitis
- Diseases of the Oesophagus
- GERD,diarrhoea
- GI bleeding
- Peptic, Ulcer, Gastritis and Other diseases of the Stomach
- Diseases of the peritoneum
- Disease of the Pancreas
- Diseases of the small Intestine
- Diseases of the Large Intestine
- Fecal Incontinence
- GI Malignancy
- Constipation - Prevention and Management
- Gut hormones

DISEASES OF THE LIVER AND BILIARY TRACT:

- Diagnostic procedures in Liver Disorders
- Derangement of Hepatic / Biliary metabolism
- Acute Hepatitis
- Chronic Active Hepatitis
- Cirrhosis of liver
- Tumors of Liver
- Suppurative Diseases of Liver
- Infiltrative and Metabolic diseases of Liver
- Disorders of Gall Bladder and Bile Duct
- Ascites

DISEASES OF THE PANCREAS:

Acute pancreatitis, chronic pancreatitis and pancreatic malignancy

DISEASES OF THE ENDOCRINE SYSTEM:

- Thalamus and Pituitary Gland
- Diseases of the Anterior Pituitary
- Disorders of the Neurohypophysis
- Hyper and Hypothyroidism
- Hyper and Hypoparathyroidism
- Diabetes Mellitus
- Hyperinsulinism / Glucagon and its effects
- Diseases of the Adrenal Cortex and Medulla
- Diseases of the testes and Ovaries
- Changes with Aging
- Diabetes Mellitus
- Diseases of the Pituitary, Parathyroid and Thyroid
- Obesity
- Sexual dysfunction

DISEASES OF THE NERVOUS SYSTEM:

- Diagnostic methods in Neurology
- Coma
- Headache
- Epilepsy and seizure disorders
- Sleep Disorders
- Diseases of Cranial Nerves
- Cerebro-vascular Diseases
- Diseases of the Spinal Cord
- Diseases of the Peripheral Nervous System
- Infections of the CNS
- Multiple Sclerosis and other demyelinating diseases
- Metabolic and Nutritional diseases of CNS,
Dementia
Degenerative disorders including Parkinsonism
- Head Trauma
- Infections of the Nervous System
- Neoplasia

DISEASES OF THE SKIN:

- Cutaneous manifestation of systemic illness
- Generalised Pruritus – vesicobullous disorders
- Pigmentation of the Skin – oral changes
- Disorders of Melanin Metabolism – Genital ageing changes
- Photosensitivity and other reactions to light
- Hirsutism and Alopecia
- The Ageing Skin
- Pruritus
- Cancers / Benign Lesions
- Pemphigus & Pemphigoid
- Senile Purpura
- Herpes Zoster

- Intertrigo
- Leg Ulcer
- Hansen's Disease
Cutaneous manifestations of internal malignancy
- Psoriasis/lichen planus/ papulo squamous disorders
- Scabies / Infections
- Fungal infections of skin / Infections / Bacterial / Viral

Disease of Hair

Disease of Nail

Disease of mucous membrane

M.D GERIATRIC MEDICINE

PAPER III:(Aging,musculoskeletal disorders, PREVENTIVE and social GERIATRICS,REHABILITATION,preoperative evaluation,Psychiatry,

GENERAL:

- Demography, World Trends
- Trends In India and Developing countries
- The Aged and Society - Past and Present
- The evolution of Geriatric Medicine

GERIATRIC MEDICINE:

- How are elderly patients different?
- Common patterns of diseases in old age
- Alteration in pain and temperature responses
- Atypical presentation
- Complications of Illness
- Non specific presentations
- Masking by known disease
- History taking in the elderly
- Physical Examination of the old patient

GERONTOGLOGY:

- Normal and Abnormal Aging
- Theories of Aging
- Metabolic and Structural Aspects of Aging
- Biochemical changes in the Normal Aging Brain
- Aging in tissues and cells
- Atherosclerosis and Aging
- Ecology of Human Senses
- The milieu interior and Aging

PSYCHO GERIATRICS

- Epidemiology of Mental Disorders in the elderly
- Definition and Classification of Psychiatric Disorders
- Delirium / Acute Confusional State
- Dementia
- Depression in Old Age
- Bipolar disorder
- Functional psychiatric disorders in old age
- Personality and Behavioural disorders
- Psychiatric service - Principles of treatment
- Management of Psychiatric Illness
- Alcoholism and the elderly patient, substance abuse
- Care-giver problems

INVESTIGATIONS IN THE ELDERLY:

- Policy
- Interpretation
- Radiological, Hematological & Biochemical investigations
- ECG
- Urinalysis
- Radio isotope tests
- Bone Scan
- Imaging - Ultrasound, CT Scan, MRI
- How much to investigate?
- Concept of Normal Range

MUSCULOSKELETAL SYSTEM:

- The aging joints
- Degenerative Joint Disease
- Gout, Pseudogout
- Rheumatoid Arthritis
- Infective Arthritis
- Myopathy, Myosites, Polymyalgia Rheumatica
- Temporal arteritis
- Osteoporosis and fractures
- Osteomalacia

DISEASES OF CONNECTIVE TISSUE, JOINTS AND BONES:

- Rheumatoid Arthritis, including LORA
- Ankylosing spondylitis
- Systemic Lupus Erythematosus
- Scleroderma
- Polymyalgia Rheumatica
- Gout Pseudogout
- Osteoarthritis
- Diseases of bone - Metabolic and Endocrine
- Tumours of Bone

SURGERY IN THE ELDERLY:

- Pre-operative Assessment
- Priorities for surgery
- Surgical Emergencies
- Fractures
- Pathological fractures
- Benign lesions
- Gangrene - Amputation
- Elective Surgery
- Post operative problems and Management
- Anesthesia in old age

SPECIAL PROBLEMS:

- Pressure Sore
- Care of the Chronically ill
- Care of patients with terminal illness
- Religion and Illness
- Falls

- Nursing home placement
- Syncope
- Frailty
- Palliative care

SOCIAL GERIATRICS:

- Types of Family - Joint Family system-promotion of Joint Family System-Role of Elders and the younger generation
- Isolation, loneliness and dependency - Dependency ratio-Generational equality
- Social changes due to urbanization and industrialization with respect to Elders
- Financial aspects - sources of Income, Old age pension
- Role of Govt and NGOs in Socio-Economic status of the Elderly
- Geriatric Service for the Elderly in Western Countries and in India - Structure of geriatric Service - Family as basic Unit - Models of Geriatric Service
- Day Hospital, Day Care Centre, Long Stay Care Institution, Home for the Aged, Functions of the Day Hospital - Staff and patients of day Hospital
- Nursing Home in Western Countries - Goals of Geriatric Care - Need for similar services in India
- Psychogeriatric services - structure and facility - Domiciliary Assessment and community Care
- Terminal Care Services - social and Spiritual problems in Terminally ill
- Ethical Issues in Geriatric Medicine - Self determination and decision making in treatment options - Informed Consent - Quality of life - Age limits on health care
- Life sustaining measures
- Euthanasia - Acts of Omission and Commission

PREVENTIVE GERIATRICS:

- Preventing Diseases and promoting health in old age - Types of preventive activities - Risk factor management in elderly - screening
- Health belief model - General Health practices in elderly
- Exercise in the elderly - Physical and Mental Benefits of Exercise
- Development of Anticipatory Care and its Rationale - methods of Anticipatory Care
- Health promotion and Health Education in the Elderly
- Anti-Aging interventions

REHABILITATION:

- The concepts and History of Rehabilitation
- The goals of Rehabilitation
- Principles of Rehabilitation - Assessment, Goals, Priorities and Monitoring Progress
- Rehabilitation in Old age - Special features in relating to aging,- multiple pathologies, Policies, Expectation, Care givers, Acute Illness, Social and Financial Support
- Clinical Evaluation of Rehabilitation - Impairment, Disability and Handicap
- Prevalence of Disability, Types of disability
- Rehabilitation as Team work - Team leadership, Therapist, physiotherapy, Occupational Therapy, Social Worker, Physician and Nursing personnel.
- Self care evaluation and management of Activities of Daily Living (ADL) and Instrumental Activities of Daily Living (IADL) - Self Care Assessment Tools
- Aids and application - tools for living
- Role of Physiotherapy in the elderly
- Contractures and other deleterious effects of immobility
- Pressure Ulcer - Factors, Prevention and management
- Rehabilitation of Stroke in the Elderly
- Rehabilitation of specific Diseases - Parkinsonism, Paraplegia,
- Fracture Neck of Femur, Acute and chronic Arthritis, Lower limb amputation, low back pain
- Organisation and Effectiveness of Rehabilitation services - Community Services
- Geriatric Unit ,Day hospital, Day Care Centre, Long Stay Care Institution - role of rehabilitation in the above services

M.D GERIATRIC MEDICINE

PAPER IV: IMMUNOLOGY, INFECTIONS, problems of Pharmacotherapy ,Oncology,Nutrition, ADVANCES IN GERIATRICS AND MISCELLANEOUS

IMMUNOLOGICAL FACTORS IN DISEASE:

- Components of immune system
- Mechanism of the immune response
- Immune deficiency and Lymphoproliferative disorders
- Types of immune reaction and their relation to disease
- Suppression of immune reactions and its effects

INFECTIONS IN THE ELDERLY:

- Host Defences - Natural Barriers
- White Cell response, Immune mechanism
- Diagnosis of Fevers
- Urinary Infection - Diagnosis and Treatment
- Pneumonias - Cause, Diagnosis and Treatment
- Septicemia
- Bacterial Endocarditis
- Nature of Micro-organisms
- Epidemiology and Spread of Infections
- Defence of Human host
- Diagnosis of Unknown origin
- Streptococcal infection, Staphylococcal infections, Diphtheria, Typhoid, Tetanus, Brucellosis, Sexually transmitted infections, Hospital acquired infections, Gram negative bacterial infections, Anaerobic Infections, TB
- Antibiotic Treatment
- Rational Use of Antibiotics and Other Antibacterial agents
- Antivirals
- Antifungals
- Anti-retroviral therapy

IMMUNOLOGY:

- Genetic aspects of Immunity and Immunological Diseases
- Mutation
- Alternative theories of Aging
- Cancer
- Immunological Surveillance

NUTRITION:

- Nutritional requirement
- Changes in total body mass and body composition
- Nutritional Assessment
- Nutritional deficiency in old age
- Osteoporosis
- Osteomalacia and Vitamin D
- Iron and Vitamins
- Recommended intake of nutrients
- Prevention of Nutritional Deficiency

DISORDERS OF THE SPECIAL SENSES:

- Disorders of the Eye
- Hearing Disturbances

- Disturbance of Taste and Smell
- Dental Problems

MALIGNANCY IN THE ELDERLY:

- Incidence, Clinical Significance
- Presentation
- Investigation and Management
- Counselling

PHARMACOLOGICAL ASPECTS OF AGEING:

- Pharmacokinetics in the elderly
- Pharmacodynamics
- Drug Selection and Dosage
- Drug interactions
- Adverse Drug Reactions
- Drug Compliance
- Drug Compliance
- Drug Misuse

ADVANCES IN GERIATRIC MEDICINE:

- Alzheimers Disease
- Parkinsonism
- Osteoporosis
- Urinary incontinence
- Falls / Prevention of Fractures
- Parenteral Nutrition
- Stroke Clinic
- Memory Clinic
- Anti Aging research
- Frailty
- Inflammatory Markers and others

M.D GERIATRICS MEDICINE
SCHEME OF PRACTICAL EXAMINATION

CLINICAL EXAMINATION	NO.Of Cases	Total Marks : 200
1. Long Case	two	100 marks each, CNS compulsory
2. Short Case	Two (2x50 marks)	100
	Total	300

VIVA VOCE EXAMINATIONS

TOTAL MARKS: 100

1. OSCE		20
2. Log Book	(Evaluation & Questioning)	20
3. Orals On Recent Advances		30
	Total	100

1.OSCE (Objective Structural Clinical Examination)

<i>Sr.No</i>	<i>Stations</i>	<i>Marks</i>
1.	<i>Images (X-ray/CT)</i>	<i>05</i>
2.	<i>Lab Data</i>	<i>05</i>
3.	<i>Procedures</i>	<i>05</i>
4.	<i>Emergency</i>	<i>05</i>
5.	<i>Communication Skills</i>	<i>05</i>
6.	<i>Drugs</i>	<i>05</i>
7.	<i>Disability</i>	<i>05</i>
8.	<i>Nutrition</i>	<i>05</i>
9.	<i>Rehabilitation</i>	<i>05</i>
10.	<i>Geriatric Assessment Tools</i>	<i>05</i>
	Total	50

Note: Serial No. 1 to 10 should be common to all the candidates appearing on that day.

2. Log Book (Evaluation and Questioning)	Marks: 20
3. Oral On Recent Advances	Marks:30

THESIS

Marks:100

Note: Thesis will be sent to two external examiners who will be different from the examiners coming for the Clinical Examination.

PASS

Candidate must pass each component separately. Even if a candidate fails in one component, the candidate is deemed to fail in the whole examination.