

RAJASTHAN PUBLIC SERVICE COMMISSION, AJMER

SYLLABUS OF COMPETITIVE EXAMINATION FOR THE POST OF ASSISTANT PROFESSOR (Broad Speciality) GERIATRICS

MEDICAL EDUCATION DEPARTMENT

A). Basic Sciences of the following systems:

Anatomy, Physiology, Biochemistry, Pharmacology, Microbiology, Pathology.

B). General Medicine and Psycho-Geriatrics

I. Introduction to Clinical Medicine:

Headache, Chest pain, Chills and Fever, Lassitude and Asthenia, Cough, Nausea and Vomiting, Dysphagia, Ascites, Weakness, Tremor, Dizziness, Vertigo, Disorders of Sensation, Seizures.

II. Immunological Factors in Disease:

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

III. Infection and Diseases:

Nature of microorganisms, Epidemiology and spread of infections, Immunity and Immunosenescence, Diagnosis and management of infections, Pyrexia of unknown origin.

IV. Chemotherapy of Infections:

Antibiotics and other antibacterial agents, Anti-virals, Anti-fungals, Anti-retroviral therapy.

V. Disturbances in Electrolyte and Water Metabolism:

Hyponatremia and hyponatremia, Hyperkalemia and hypokalemia, Calcium-phosphate and magnesium metabolism, Disturbances in H⁺ ion concentration.

VI. Diseases of the Cardiovascular System:

Cardiac Arrhythmias, Cardiac failure, Valvular Heart Disease, Ischemic Heart Disease, Pericardial diseases, Cardiomyopathies, Myocarditis, Atherosclerosis, hypertension, Diseases of the aorta, Peripheral Vascular Disease.

VII. Diseases of the Respiratory System:

Disease of the Upper and Lower Respiratory Tract, Bronchial Asthma, Chronic Obstructive Pulmonary Disorder (COPD), Cor Pulmonale, Acute and Chronic Respiratory Failure, Neoplasm of Lung, Diseases of Pleura, Mediastinum and Diaphragm.

VIII. Diseases of the Gastrointestinal System:

Diseases of the Esophagus, Gastro-Esophageal Reflux Disorder (GERD), Peptic Ulcer, Gastritis and other diseases of the Stomach, Inflammatory diseases of Small and Large Intestine, Diverticulosis, Malignancy of stomach, Small Intestine, Colon and Rectum, Mal-Absorption Syndrome, Diseases of the Peritoneum.

IX. 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, Liver Abscess, Infiltrative and Metabolic diseases of Liver, Disorders of Gall Bladder and Bile Duct, Ascites.

X. Diseases of the Pancreas:

Diagnosis of Pancreatic diseases, Acute and chronic Pancreatitis, Tumors of Pancreas.

XI. 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, Renal Cell Carcinoma.

XII. Diseases of the Endocrine System:

Thalamus and Pituitary Gland, Diseases of the Anterior Pituitary, Disorders of the Neuro-hypophysis, Hyper Thyroidism and Hypo -thyroidism, Hyper-Parathyroidism and Hypo –parathyroidism, Diabetes Mellitus, Hyperinsulinism /Glucagon and its effects, Diseases of the Adrenal Cortex and Medulla, Diseases of the Testes and Ovaries.

XIII. Diseases of Blood and Blood Forming Organs:

Blood formation and destruction, Anemia, Bone Marrow Failure, Blood Groups and Blood Transfusion, Myeloproliferative disorders, Abnormal Hemoglobins, Disorders of platelets, Hemorrhagic disorders, Leukemia, Lymphomas, Diseases of Spleen and Reticulo-Endothelial system.

XIV. Diseases of Connective Tissue, Joints and Bones:

Rheumatoid Arthritis including Late Onset Rheumatoid Arthritis (LORA), Ankylosing Spondylitis, Systemic Lupus Erythematosus/ Vasculitis, Scleroderma, Polymyalgia Rheumatica, Gout/ Pseudogout, Osteoarthritis, Diseases of Bone - Metabolic and Endocrine, Tumors of Bone.

XV. Diseases of the Nervous System:

Diagnostic methods in Neurology, Coma, Headache, Epilepsy, Sleep Disorders, Diseases of Cranial Nerves, Cerebro-Vascular Diseases, Diseases of the Spinal Cord, Diseases of the Peripheral Nervous System, Pyogenic infections of the CNS, Viral Infections, Multiple Sclerosis and other demyelinating diseases, Metabolic and Nutritional diseases of Brain, Degenerative diseases.

XVI. Diseases of the Skin:

Skin lesions of general medical significance, Generalized Pruritus, Pressure Ulcers, Pigmentation of the skin, Disorders of Melanin Metabolism, Photosensitivity and other reactions to light, Hirsutism and Alopecia, Cutaneous manifestations of internal malignancy, Psoriasis, Scabies, Fungal infections of skin.

XVII. 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 behavioral disorders, Psychogeriatric service - Principles of treatment, Management of Psychiatric Illness, Alcoholism and the elderly patient, Care-giver problems.

C). Geriatric Medicine

I. General:

Demography, World Trends, Trends in India and Developing countries, The Aged and Society - Past and Present, The evolution of Geriatric Medicine, Life course approach to ageing.

II. Gerontology:

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.

III. Geriatric Medicine:

How are older patients different? Common patterns of disease in old age, Alteration in pain and temperature responses, Missing Symptoms, Complications of Illness, Non-specific presentations, Masking by known disease, History taking in the elderly, Physical Examination of the old patient, Geriatric Syndromes: immobility, instability (falls), incontinence, impaired intellect/memory, frailty, sarcopenia, anorexia of aging, cognitive impairment, polypharmacy.

IV. Investigations in the elderly:

Policy and 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.

V. Immunology:

Genetic aspects of Immunity and Immunological Diseases, Mutation, Alternative Theories of Aging, Cancer, Immunological Surveillance.

VI. 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.

VII. 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, Chronic Congestive Heart Failure, Aortic aneurysm, Bacterial Endocarditis, Peripheral Vascular Disease, Deep Venous Thrombosis and Pulmonary Embolism.

VIII. Endocrine and Metabolic Disorders:

Changes with aging, Diabetes Mellitus, Diseases of the Pituitary, Parathyroid and Thyroid, Obesity, Sexual dysfunction, Disorders of Sodium, Potassium, Calcium, Magnesium and Zinc, Disturbances of Fluid Metabolism, Hyperpyrexia / Heat Stroke.

IX. Central Nervous System:

The Aging Brain, Vascular lesions of the Central Nervous System (Dementia, Degenerative disorders including Parkinsonism,) Head Trauma, Infections of the Nervous System, Epilepsy, Peripheral Neuropathy, Disorders of Spinal cord and Nerve Roots, Neoplasia.

X. 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, Gynecological disorders in the elderly.

XI. Disorders of the Special Senses:

Disorders of the Eye, Hearing Disturbances, Disturbance of Taste and Smell, Dental Problems.

XII. Infections in the Elderly:

Host Defenses - Natural Barriers, White Cell response, Immune mechanism, Diagnosis of Fevers, Urinary Infection - Diagnosis and Treatment, Pneumonias - Cause, Diagnosis and Treatment, Septicemia, Bacterial Endocarditis, Antibiotic Treatment, Rational Use of Antibiotics.

XIII. Gastro-Intestinal System:

Changes with age, Investigations of the Gastro-Intestinal Tract, Disorders of the Mouth, GERD / Hiatus Hernia, Acid Peptic Disease, Disease of the Pancreas, Diseases of the small Intestine, Diseases of the Large Intestine, Fecal Incontinence, GI Malignancy, Disease of the Liver and Biliary System, Constipation – Prevention and Management.

XIV. Respiratory System:

Changes with age, Infections of the Respiratory System, Bronchial Asthma, Chronic Obstructive Airway Disease, Cor Pulmonale, Bronchogenic Carcinoma, Respiratory Abnormalities in Extra-pulmonary conditions, Respiratory Failure.

XV. Musculoskeletal System:

The Aging Joints, Degenerative Joint Disease, Gout/ Pseudo-Gout, Rheumatoid Arthritis, Infective Arthritis, Myositis/ Myopathy, Polymyalgia Rheumatica/ Temporal Arthritis, Osteoporosis, Osteomalacia.

XVI. Hematopoietic System:

Changes with aging, Anemia in the elderly, Leukemias and Lymphomas, Paraproteinaemia, Myelodysplastic syndromes, Disorders of Hemostasis.

XVII. Dermatology:

Aging skin, Senile purpura, Bed sores, Pruritus/ Intertrigo, Cancers/benign lesions, Pemphigus/ pemphigoid, Herpes Zoster, Leg ulcer.

XVIII. Malignancy in old age:

Incidence, Clinical Significance, Presentation, Investigation and Management, Counseling.

XIX. Pharmacological Aspects of Aging:

Pharmacokinetics in the elderly, Pharmacodynamics, Drug Selection and Dosage, Drug Interactions, Adverse Drug Reactions, Drug Compliance, Drug Misuse/Drug abuse.

XX. 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, Pressure Sore.

D). Social and Preventive Geriatrics including Rehabilitation, Advances in Geriatrics and miscellaneous:

I. 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 Government and NGOs in up-liftment of socio-economic status of older people, International and national policies on ageing and old age care, 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, Psycho-geriatric 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, Euthanasia- Acts of Omission and Commission, Ageism, Religion and Illness, Nursing home placement.

II. 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 domain, 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.

III. 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 pathology, policies, expectation, carers, 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, Organization 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, Home based care, Long term care.

IV. Advances in Geriatric Medicine:

Alzheimer's Disease, Parkinsonism, Osteoporosis, Urinary Incontinence, Falls/ Prevention of Fractures, Parenteral Nutrition, Stroke Clinic and Memory Clinic, Anti-aging research, Telemedicine, Age friendly environment, UN Decade of Healthy Ageing, Digital literacy in older people, Geriatric care in Nirogi Rajasthan, Elder abuse, Maintenance and welfare of parents and senior citizen act, 2007 and its amendments.

V. End of Life Care:

Estimating EOLC needs in the community, Gaps in EOLC needs in India across various clinical setting, Prognostication, Principles of Good Death, Components of Good Death, Steps involved in providing Good End of Life Care (1. Recognizing the dying process 2. End of Life Decision Making 3. Initiation of EOLC 4. Process of EOLC 5. After death Care), Recognizing the dying process, EOLC decision making (Timing, Decision Makers, Shared Decision Making), Ethical aspects specific to EOLC (Autonomy and Beneficence, Autonomy and Non Maleficence, Non- abandonment and Non-Maleficence, Disclosure and beneficence, Fair allocation of societal resources). Special ethical situations (Futility of treatment and Euthanasia) , Legal aspects of EOL as applicable to India, Principles of EOLC symptom management, 6 step EOLC approach (Identify – Assess – Plan – Provide – Reassess – Reflect), Respiratory secretions in EOLC, Nursing Interventions in EOLC, Palliative Sedation, Silver hour, End of Life Care process and pathways, Principles of after death care, 4 step approach in verification and certification of death (verification – certification – reporting – registration), International guidelines for verification of death. Verification of death in primary care, hospital, ICU and comatose patients. Registration of Births and Death Act, 1969, Writing a death certificate. Death Certificate form and When not to issue death certificate.

VI. Advanced Directives and Advanced Care Planning:

Definition of Advance Directives (AD), Types of AD, Components of AD, Evidence for AD, Definition of Advance Care Planning (ACP), Differences between AD and ACP, Components of effective ACP, Evidence for ACP.

Pattern of Question Papers:

- 1. Objective Type Paper**
- 2. Maximum Marks: 150**
- 3. Number of Questions: 150**
- 4. Duration of Paper : 2.30 Hours**
- 5. All Questions carry equal marks**
- 6. There will be Negative Marking**

(For every wrong answer one-third of the marks prescribed for that Particular question shall be deducted.)