

March 2009

[KU 164]

Sub. Code: 2059

M.D. DEGREE EXAMINATION

BRANCH XVI – GERIATRICS

(Candidates admitted from 2004-05 to 2008-2009 onwards)

Paper I – ALLIED BASIC SCIENCES IN GERIATRICS

Q.P. Code : 202059

Time : Three hours

Maximum : 100 marks

I. ANATOMY - Answer any FOUR questions.

(4 x 5=20)

1. Anatomy of coronary arteries.
2. Basal ganglion.
3. Anatomy of parathyroid glands.
4. Fundus (eye).
5. Anatomy of Limbic system.

II. PHYSIOLOGY - Answer any FOUR questions.

(4 x 5=20)

1. Renal function tests.
2. Frontal lobe functions.
3. Thermo-regulation.
4. Thyroid stimulating hormone.
5. Blood brain barrier.

III. BIOCHEMISTRY - Answer any THREE questions.

(3 x 5=15)

1. Plasmapheresis.
2. Renal tubular acidosis.
3. Serum enzymes estimation in myocardial infarction.
4. Prothrombin time.

IV. PHARMACOLOGY - Answer any THREE questions.

(3 x 5=15)

1. Newer antiepileptic drugs.
2. Lithium carbonate.
3. Anti platelet drugs.
4. Anti fungal agents.

V. MICROBIOLOGY - Answer any THREE questions.

(3 x 5=15)

1. Investigation for leptospirosis.
2. Polymerase chain reaction.
3. Community acquired pneumonia.
4. Lepa reactions.

VI. PATHOLOGY - Answer any THREE questions.

(3 x 5=15)

1. Diabetic nephropathy.
2. Acute infective endocarditis.
3. Emphysema.
4. Thrombocytopenia.

March 2010

[KW 164]

Sub. Code: 2059

M.D. DEGREE EXAMINATION

Branch XVI – GERIATRICS

Paper I – (for candidates admitted from 2004-05 to 2007-08) and

Part I – (for candidates admitted from 2008-2009 onwards)

ALLIED BASIC SCIENCES IN GERIATRIC MEDICINE

Q.P. Code : 202059

Time : Three hours

Maximum : 100 marks

Draw suitable diagram wherever necessary.

Answer ALL questions.

I. ANATOMY

(4 x 5=20)

1. Mitral valve apparatus.
2. Medulla oblongata.
3. Pancreas.
4. Middle ear.

II. PHYSIOLOGY

(4 x 5=20)

1. Cardiac cycle.
2. Deep tendon reflex.
3. Gonadotropins.
4. Pulmonary function tests.

III. BIOCHEMISTRY

(3 x 5=15)

1. Bilirubin metabolism.
2. Serum markers of acute inflammation.
3. Serum potassium.

IV. PHARMACOLOGY

(3 x 5=15)

1. Thrombolytic agents.
2. Thalidomide.
3. Chloroquine.

V. MICROBIOLOGY

(3 x 5=15)

1. Investigations of malaria.
2. Immunofluorescence.
3. Atypical pneumonia.

VI. PATHOLOGY

(3 x 5=15)

1. Giant cell.
2. Aschoff's body.
3. Amyloidosis.

MAY 2011

[KY 164]

Sub. Code: 2059

M.D. DEGREE EXAMINATION

BRANCH XVI – GERIATRICS

ALLIED BASIC SCIENCES IN GERIATRIC MEDICINE

Q.P. Code : 202059

**Time : 3 hours
(180 Min)**

Maximum : 100 marks

Answer ALL questions in the same order.

Write notes on :

Pages (Max.)	Time (Max.)	Marks (Max.)
-------------------------	------------------------	-------------------------

I. ANATOMY

- | | | | |
|------------------------------------|---|---|---|
| 1. Conduction system of the heart. | 3 | 9 | 5 |
| 2. Broncho pulmonary segments. | 3 | 9 | 5 |
| 3. Innervation of urinary bladder. | 3 | 9 | 5 |
| 4. Anatomy of Pancreas. | 3 | 9 | 5 |

II. PHYSIOLOGY

- | | | | |
|--------------------------------|---|---|---|
| 1. Frontal lobe functions. | 3 | 9 | 5 |
| 2. Sleep cycle. | 3 | 9 | 5 |
| 3. Erythropoietin. | 3 | 9 | 5 |
| 4. Hypothalamo pituitary axis. | 3 | 9 | 5 |

III. BIOCHEMISTRY

- | | | | |
|--------------------------|---|---|---|
| 1. Renal Glycosuria. | 3 | 9 | 5 |
| 2. Calcium metabolism. | 3 | 9 | 5 |
| 3. Liver function tests. | 3 | 9 | 5 |

IV. PHARMACOLOGY

- | | | | |
|---|---|---|---|
| 1. Drug interactions. | 3 | 9 | 5 |
| 2. Raloxifene. | 3 | 9 | 5 |
| 3. Selective Serotonin Reuptake inhibitors. | 3 | 9 | 5 |

V. MICROBIOLOGY

- | | | | |
|-------------------------------|---|---|---|
| 1. Leptospirosis. | 3 | 9 | 5 |
| 2. Vaccination in Elderly. | 3 | 9 | 5 |
| 3. Polymerase chain reaction. | 3 | 9 | 5 |

VI. PATHOLOGY

- | | | | |
|--|---|---|---|
| 1. Neuropathology of Alzheimers disease. | 3 | 9 | 5 |
| 2. Tumor markers. | 3 | 9 | 5 |
| 3. Chronic active hepatitis. | 3 | 9 | 5 |

**M.D. DEGREE EXAMINATION
BRANCH XVI –GERIATRICS
ALLIED BASIC SCIENCES IN GERIATRIC MEDICINE
Q.P. Code : 202059**

**Time : 3 hours
(180 Min)**

Maximum : 100 marks

Answer ALL questions in the same order.

Write notes on

**Pages Time Marks
(Max.) (Max.) (Max.)**

I. ANATOMY

- | | | | |
|---|---|---|---|
| 1. Describe the Blood supply of heart. | 3 | 9 | 5 |
| 2. Describe anatomy and surface marking of liver. | 3 | 9 | 5 |
| 3. Discuss the Anatomy, relationship of prostate. | 3 | 9 | 5 |
| 4. Write a note on nuclear masses of Thalamus. | 3 | 9 | 5 |

II. PHYSIOLOGY

- | | | | |
|--|---|---|---|
| 1. Enumerate the Functions of platelets. | 3 | 9 | 5 |
| 2. How calcium homeostasis is maintained. | 3 | 9 | 5 |
| 3. Mechanism of postural maintenance of blood pressure. | 3 | 9 | 5 |
| 4. Frontal lobe functions and its clinical manifestations. | 3 | 9 | 5 |

III. BIOCHEMISTRY

- | | | | |
|---|---|---|---|
| 1. Describe Anion gap and its significance. | 3 | 9 | 5 |
| 2. Alkaline phosphatase and its clinical relevance. | 3 | 9 | 5 |
| 3. What are Antioxidants and its role in aging? | 3 | 9 | 5 |

IV. PHARMACOLOGY

- | | | | |
|--|---|---|---|
| 1. Pharmacokinetic changes that occur in the elderly. | 3 | 9 | 5 |
| 2. Low molecular weight heparin and its role in clinical Practice. | 3 | 9 | 5 |
| 3. Indication and mechanism of action of Finasteride in elderly. | 3 | 9 | 5 |

V. MICROBIOLOGY

- | | | | |
|--|---|---|---|
| 1. Helicobacter pylori and its clinical relevance. | 3 | 9 | 5 |
| 2. Describe the Immunology of aging. | 3 | 9 | 5 |
| 3. Investigations in the diagnosis of leptospirosis. | 3 | 9 | 5 |

VI. PATHOLOGY

- | | | | |
|--|---|---|---|
| 1. Discuss about Renal osteodystrophy. | 3 | 9 | 5 |
| 2. Histopathology of Non alcoholic steato hepatitis. | 3 | 9 | 5 |
| 3. Describe neurofibrillary tangles. | 3 | 9 | 5 |

((LC 164)

APRIL 2013

Sub code:2059

**M.D. DEGREE EXAMINATION
BRANCH XVI – GERIATRICS
ALLIED BASIC SCIENCES IN GERIATRIC MEDICINE
Q.P.CODE:202059**

Time: Three Hours

Maximum: 100 marks

Write notes on:

I. ANATOMY

(4X5=20)

1. What is the blood supply to the brain and what is neurological deficit if the left common carotid artery is blocked?
2. How will you differentiate between a conus medullaris and a cauda equine lesion?
3. What does the limbic system comprise of? What are its functions?
4. What is the blood supply to the conduction system of the heart?

II. PHYSIOLOGY

(4X5=20)

1. Explain the physiology behind postural hypotension
2. What is the recommended daily intake of micro nutrients in an elderly patient and in which foods would you find them? How will it affect the patient if these micronutrients are omitted from the diet?
3. Write a note about calcium metabolism.
4. What is circadian rhythm? What are the stages of sleep?

III. BIO-CHEMISTRY

(3X5=15)

1. Write a note on erythropoietin – emphasizing on where is it produced from and what is its clinical significance?
2. How is glucose metabolized in the body?
3. Write a note on purine metabolism and what is the clinical significance if this pathway is disturbed?

IV. PHARMACOLOGY

(3X5=15)

1. Enumerate the newer drugs used in hyperuricemia – their actions, indications and side effect profiles.
2. What are the different classes of oral hypoglycemic agents and where do they act?
3. Name the anti hypertensives that can be used in renal failure and what is their mechanism of action.

V. MICROBIOLOGY

(3X5=15)

1. What are the newer methods used to detect tuberculosis?
2. Describe in detail the polymerase chain reaction
3. Write a short note on immune surveillance – its use and the phases of immune surveillance

VI. PATHOLOGY

(3X5=15)

1. Discuss the states of formation of a plaque in the blood vessels, and its prevention and treatment.
2. Enumerate the indications for a DEXA (dual Energy X-Ray Absorptiometry) scan in a patient and its interpretation
3. How will you investigate and manage a case of thrombocytopenia?

[LI 164]

APRIL 2016

Sub. Code: 2059

**M.D. DEGREE EXAMINATION
BRANCH XVI – GERIATRICS
PAPER I – APPLIED BASIC SCIENCES IN GERIATRIC MEDICINE
Q.P. Code :202059**

Time: Three Hours

Maximum : 100 Marks

Write Notes on :

I. ANATOMY:

(4 x 5 = 20)

1. Describe the innervation of the bladder with a neatly labelled diagram.
2. Describe the Coronary circulation with suitable illustration. What are the ECG changes one would expect if the right coronary artery is occluded?
3. Draw the dermatomes in the body – anterior and posterior views, and label them.
4. Where and how does the trachea bifurcate? Name the bronchopulmonary segments and what segments would be involved in aspiration when the patient is supine and erect, and why?

II. PHYSIOLOGY:

(4 x 5 = 20)

1. What are the substances which are absorbed and secreted at the renal tubular level? Explain with a diagram.
2. Cholesterol metabolism.
3. Lung function tests.
4. What is Frank Starling's law? In what way does this law explain cardiac failure?

III. BIO-CHEMISTRY:

(3 x 5 = 15)

1. What are the essential fatty acids? Enumerate the different types, their uses, requirements per day, and what would their deficiencies result in?
2. How is Vitamin D produced? What are its different forms? Name the uses of Vitamin D.
3. What are antioxidants and what is their role in the human body?

IV. PHARMACOLOGY:

(3 x 5 = 15)

1. What are the atypical antipsychotics? What are their side effects and their safety profile in the elderly?
2. Write a note on bioavailability of drugs.
3. What are the oral hypoglycaemic drugs that are safe to use in renal failure? Enumerate them and write notes on their mechanism of action, metabolism and excretion.

V. MICROBIOLOGY:

(3 x 5 = 15)

1. Clostridium difficile infection in the elderly – presentation, treatment and prognosis.
2. Infection control practices in hospitals.
3. ELISA test – principle, uses and interpretation.

VI. PATHOLOGY:

(3 x 5 = 15)

1. What are the causes of hypochromic microcytic anemia? How would you investigate this entity in a 65 year old patient who has come to you with lethargy?
2. Describe the pathological changes – gross and micro – one would expect to see on the autopsy of a patient with Alzheimer's dementia.
3. What is the pathophysiology of frailty?

[LK 164]

MAY 2017

Sub. Code: 2059

**M.D. DEGREE EXAMINATION
BRANCH XVI – GERIATRICS
PAPER I – APPLIED BASIC SCIENCES IN GERIATRIC MEDICINE**

Q.P. Code :202059

Time: Three Hours

Maximum : 100 Marks

Write Notes on :

I. ANATOMY: (4 x 5 = 20)

1. Discuss the anatomy and functions of Limbic system.
2. Middle ear.
3. Anatomy and functions of prostate and its clinical significance.
4. Organ systems involved in Balance and Posture control.

II. PHYSIOLOGY: (4 x 5 = 20)

1. Thyroid function and its abnormalities.
2. What is circadian rhythm? What are the stages of sleep?
3. Enumerate the Functions of platelets.
4. Erythropoietin and its clinical use.

III. BIO-CHEMISTRY: (3 x 5 = 15)

1. Prothrombin time.
2. Vitamin D and its clinical importance.
3. Serum Potassium.

IV. PHARMACOLOGY: (3 x 5 = 15)

1. What are Antioxidants and its role in aging?
2. Selective serotonin Reuptake Inhibitors.
3. Newer drugs for Parkinsonism.

V. MICROBIOLOGY: (3 x 5 = 15)

1. Sterile pyuria.
2. Latent Tuberculosis.
3. Varicella Infection.

VI. PATHOLOGY: (3 x 5 = 15)

1. Non Hodgekins Lymphoma.
2. Small cell Lung carcinoma.
3. Amyloidosis.

[LL 164]

OCTOBER 2017

Sub. Code: 2059

**M.D. DEGREE EXAMINATION
BRANCH XVI – GERIATRICS**

PAPER I – APPLIED BASIC SCIENCES IN GERIATRIC MEDICINE

Q.P. Code :202059

Time: Three Hours

Maximum : 100 Marks

Write Notes on :

I. ANATOMY:

(4 x 5 = 20)

1. Describe the anatomy of coronary arteries.
2. Describe the innervations of urinary bladder and different types of pathological bladder.
3. Nigro striatal pathway in health and disease.
4. Bronchopulmonary segments.

II. PHYSIOLOGY:

(4 x 5 = 20)

1. Maintenance of calcium hemostasis.
2. Hepcidin and its significance.
3. Cardiac cycle.
4. Pulmonary function tests.

III. BIO-CHEMISTRY:

(3 x 5 = 15)

1. Anion gap and its significance.
2. Enzymes estimation in Myocardial Infarction.
3. Inflammatory markers and its role in aging.

IV. PHARMACOLOGY:

(3 x 5 = 15)

1. Selective estrogen receptor modulators.
2. Amiodarone toxicity.
3. Anticoagulants, indications and side effects in elderly.

V. MICROBIOLOGY:

(3 x 5 = 15)

1. Community acquired pneumonia.
2. Gene expert.
3. Immunology of Ageing.

VI. PATHOLOGY:

(3 x 5 = 15)

1. Neuropathology of Alzheimers Disease.
2. Myelodysplasia, Myelofibrosis.
3. Asthma and Chronic Bronchitis.

M.D. DEGREE EXAMINATION
BRANCH XVI – GERIATRICS
PAPER I – APPLIED BASIC SCIENCES IN GERIATRIC MEDICINE
Q.P. Code :202059

Time: Three Hours**Maximum : 100 Marks****Write Notes on :****I. ANATOMY:****(4 x 5 = 20)**

1. Mr. Alagappan has a foot drop. What is the nerve involved, and what is its branch of and what muscles does it supply? What could be a cause for the foot drop? How would you evaluate and treat him?
2. Describe the normal histology of the liver, with an appropriate diagram.
3. Trace the optic pathway with a diagram. What are the deficits one would expect if the nerve is affected anywhere along its course?
4. What is the corticospinal tract? What is its function and describe its course in detail with the help of a diagram? What are the deficits one would expect if this tract was injured at its various levels?

II. PHYSIOLOGY:**(4 x 5 = 20)**

1. What are the phases of a normal swallow? How will you assess swallow in a patient suspected to have a swallowing difficulty?
2. Describe the neuro muscular junction with an appropriate diagram. What are the neurotransmitters seen at the junction? What would you expect to find at the junction in a patient with Myasthenia gravis?
3. Describe the renin angiotensin system and its relevance in blood pressure control.
4. Enzymes involved in digestion.

III. BIO-CHEMISTRY:**(3 x 5 = 15)**

1. Cystatin C – what is its clinical significance, and what is its sensitivity and specificity?
2. What are the liver function tests? What functions of the liver do they assess individually?
3. How will you ideally evaluate a patient with hypercalcemia? What is the treatment you would initiate?

IV. PHARMACOLOGY:**(3 x 5 = 15)**

1. Write a note on Acetylcholine Esterase (ACE) inhibitors – its mechanism of action, indications and its usefulness.
2. How does one evaluate newer drug therapies?
3. What are the safety profiles of anti convulsants in the elderly? Enumerate all the classes of drugs one would use in an elderly patient with seizure disorder? What would your drug of choice be?

V. MICROBIOLOGY:**(3 x 5 = 15)**

1. Hepatitis B – Investigation treatment and prevention.
2. Innate immunity – components, activation and how does it protect us?
3. How would you test for HIV1 in a blood sample – enumerate the methods and their sensitivity and specificity, and interpretation? What is the gold standard?

VI. PATHOLOGY:**(3 x 5 = 15)**

1. Enumerate the various tumour markers and the tumours they are associated with.
2. Describe the pathological changes seen in the red and white blood cells of a patient suffering from Myelodysplastic Syndrome.
3. Describe (with appropriate diagrams) how a normal liver progresses onto be labelled as a cirrhotic liver on a biopsy?

M.D. DEGREE EXAMINATION**BRANCH XVI – GERIATRICS****PAPER I – APPLIED BASIC SCIENCES IN GERIATRIC MEDICINE****Q.P. Code: 202059****Time: Three Hours****Maximum : 100 Marks****Write Notes on :****I. ANATOMY:****(4 x 5 = 20)**

1. Draw a section of the cord and identify the structures involved in Brown Sequard syndrome. What are the associated clinical deficits?
2. Draw a nephron. List the site of action of various diuretics.
3. Innervation of small muscles of the hand.
4. Classification of cervical lymph nodes.

II. PHYSIOLOGY:**(4 x 5 = 20)**

1. Red blood cell indices and their utility in evaluation of anaemia.
2. List the hormones secreted by the adrenal gland and their functions.
3. Oxy haemoglobin dissociation curve and its relevance in clinical practice.
4. Describe the process of bone remodeling.

III. BIO-CHEMISTRY:**(3 x 5 = 15)**

1. Hyperbilirubinemia – classification and approach to diagnosis.
2. Biochemical abnormalities in diabetic ketoacidosis and Hyperosmolar non ketotic coma.
3. Mechanism of action of Vitamin D.

IV. PHARMACOLOGY:**(3 x 5 = 15)**

1. Pharmacological treatment of Alzheimer's dementia.
2. Lipid lowering agents.
3. Newer therapies for osteoporosis.

V. MICROBIOLOGY:**(3 x 5 = 15)**

1. Causes and diagnosis of acute viral hepatitis.
2. Common skin and soft tissue infections and the organisms causing them.
3. Microbiology of infective endocarditis.

VI. PATHOLOGY:**(3 x 5 = 15)**

1. Oesophageal changes due to chronic gastro oesophageal reflux disease.
2. Granulomatous inflammation etiology and evaluation.
3. Nephrotic syndrome – causes, classification and pathology.

M.D. DEGREE EXAMINATION

BRANCH XVI – GERIATRICS

PAPER I – APPLIED BASIC SCIENCES IN GERIATRIC MEDICINE

Q.P. Code: 202059

Time: Three Hours

Maximum : 100 Marks

Write Notes on :

I. ANATOMY: (4 x 5 = 20)

1. Describe Facial nerve and its applied anatomy.
2. Portal circulation and applied anatomy.
3. Anatomy of parathyroid glands.
4. Basal ganglion.

II. PHYSIOLOGY: (4 x 5 = 20)

1. Cerebellar functions.
2. Frank starlings law in cardiac failure.
3. Balance mechanism.
4. Arterial blood gas analysis.

III. BIO-CHEMISTRY: (3 x 5 = 15)

1. Serum electrophoresis.
2. Essential Amino Acids.
3. Isoenzymes.

IV. PHARMACOLOGY: (3 x 5 = 15)

1. Pharmacokinetics in elderly.
2. 5 alpha reductase inhibitors.
3. Inotropes.

V. MICROBIOLOGY: (3 x 5 = 15)

1. H. Pylori.
2. Polymerase chain reaction.
3. Cerebral malaria.

VI. PATHOLOGY: (3 x 5 = 15)

1. Tumour markers.
2. Renal cell carcinoma.
3. Emphysema.

M.D. DEGREE EXAMINATION
BRANCH XVI – GERIATRICS
PAPER I – APPLIED BASIC SCIENCES IN GERIATRIC MEDICINE

Q.P. Code: 202059

Time: Three Hours

Maximum : 100 Marks

Write Notes on :

I. ANATOMY: (4 x 5 = 20)

1. Broncho pulmonary segments.
2. Nuclei of thalamus.
3. Innervation of urinary bladder.
4. Conductive system of Heart.

II. PHYSIOLOGY: (4 x 5 = 20)

1. Counter current mechanism.
2. Cardiac output.
3. Temperature regulation.
4. Frontal lobe functions.

III. BIO-CHEMISTRY: (3 x 5 = 15)

1. Ketone bodies and its clinical significance.
2. Diagnostic tests for vitamin B12 deficiency.
3. Serum osmolality.

IV. PHARMACOLOGY: (3 x 5 = 15)

1. Prescribing cascade.
2. Newer antipsychotics
3. Medical management of Benign prostatic hypertrophy.

V. MICROBIOLOGY: (3 x 5 = 15)

1. Covid – 19.
2. Herpes zoster.
3. Aspiration Pneumonia.

VI. PATHOLOGY: (3 x 5 = 15)

1. Pathology in Alzheimer's disease.
2. Cardiac vegetations.
3. Inflammaging.

[MD 0721]

JULY 2021
(MAY 2021 SESSION)
M.D. DEGREE EXAMINATION
BRANCH XVI – GERIATRICS

Sub. Code: 2059

PAPER I – APPLIED BASIC SCIENCES IN GERIATRIC MEDICINE

Q.P. Code: 202059

Time: Three Hours

Maximum : 100 Marks

Write Notes on :

I. ANATOMY: **(4 x 5 = 20)**

1. Anatomy of limbic system.
2. Extraocular muscles- innervation and applied anatomy.
3. Circle of Willis.
4. Structure of nephron- site of action of diuretics.

II. PHYSIOLOGY: **(4 x 5 = 20)**

1. Glomerular filtration rate.
2. Stages of sleep.
3. Enzymes in digestion.
4. Hypothalamo-pituitary axis.

III. BIO-CHEMISTRY: **(3 x 5 = 15)**

1. Inflammatory markers in aging.
2. Purine metabolism.
3. Biochemical markers of osteoblastic and osteoclastic activity.

IV. PHARMACOLOGY: **(3 x 5 = 15)**

1. Thrombolytic agents.
2. SERM.
3. Anticholinergic burden.

V. MICROBIOLOGY: **(3 x 5 = 15)**

1. RT PCR.
2. Herd immunity.
3. Newer modalities to detect TB.

VI. PATHOLOGY: **(3 x 5 = 15)**

1. Non-Alcoholic Steato Hepatitis(NASH) – histopathology.
2. Oesophageal changes in chronic GERD.
3. Renal biopsy-indications and histopathology of membranous nephropathy.

THE TAMIL NADU DR.M.G.R. MEDICAL UNIVERSITY

[MD 0522]

MAY 2022

Sub. Code: 2059

M.D. DEGREE EXAMINATION

BRANCH XVI – GERIATRICS

PAPER I – APPLIED BASIC SCIENCES IN GERIATRIC MEDICINE

Q.P. Code: 202059

Time: Three Hours

Maximum : 100 Marks

Write Notes on :

I. ANATOMY: (4 x 5 = 20)

1. Mr. Arulappan has had an inferior wall myocardial infarction, with a diagram explain the blood supply to the heart and its conducting system, and highlight the implicated artery.
2. With nearly labelled diagrams, draw and explain the blood supply to the brain.
3. With a neatly labelled diagram, describe the corticospinal and spino thalamic tracts and highlight at which levels they cross over.
4. Describe a synovial joint, with the aid of a diagram.

II. PHYSIOLOGY: (4 x 5 = 20)

1. Describe the role played by the rennin-angiotension-adosterone system in regulating blood pressure.
2. Describe the process of memory storage and retrieval in the human brain.
3. Describe the phases of sleep and how are they affected in a geriatric population?
4. Explain the phases of the cardiac cycle with the aid of a diagram.

III. BIO-CHEMISTRY: (3 x 5 = 15)

1. What are the liver function tests? How would you interpret them? What additional tests should one perform to assess the status of the liver?
2. Biomarkers in Sarcopenia - are they useful?
3. In Patient with NSTEMI, with an appropriate diagram, explain the rise and fall of the cardiac enzymes.

IV. PHARMACOLOGY: (3 x 5 = 15)

1. The COVID pandemic has thrown up a lot of drugs, either useful in prevention or treatment. Enumerate these drugs and summarize their usefulness with evidence from published studies.
2. Seventy year old Mrs.Seethalakshmi is in a fix. She has just had a fracture of the right neck of femur, following a trivial fall. She has been reading up, and found numerous drugs on the internet which help in the treatment of osteoporosis. Compare and contrast the drugs, their use, dosage, contraindications, side effects and length of treatment of these drugs.

... 2...

3. Medical representatives are always trying to get us to buy the latest on the market. Write a note on the newer insulins –their benefits, dose and cost effectiveness. What is a convenient schedule for sixty three year old Dr.Keerthi, a busy interventionist with Type II diabetes (with secondary oral hypoglycemic failure) and erratic meals times?

V. MICROBIOLOGY:

(3 x 5 = 15)

1. What are the organisms commonly implicated in hospital acquired pneumonia and their antibiotic susceptibility. Add a note on what organisms would be implicated in a patient with aspiration pneumonia and what are the antibiotics which are ideal for this entry?
2. Write a note on antibiotic stewardship.
3. What does a polymerase chain reaction actually detect? What is the basic principle underlying this test? What are the components and reagents this test requires? What is thermal cycling?

VI. PATHOLOGY:

(3 x 5 = 15)

1. Enumerate the causes of acute kidney injury. What are the pathological features of acute kidney disease?
2. Describe the pathophysiology of heart failure.
3. Describe the underlying pathology in Parkinson's disease.

[MD 0522]

THE TAMIL NADU DR.M.G.R. MEDICAL UNIVERSITY

[MD 0723]

**JULY 2023
(MAY 2023 EXAM SESSION)**

Sub. Code: 2059

M.D. DEGREE EXAMINATION

BRANCH XVI – GERIATRICS

PAPER I – APPLIED BASIC SCIENCES IN GERIATRIC MEDICINE

Q.P. Code: 202059

Time: Three Hours

Maximum : 100 Marks

Write Notes on :

I. ANATOMY: (4 x 5 = 20)

1. Trace the course of the facial nerve.
2. Respiratory gas exchange unit with appropriate diagrams.
3. Conducting system of the heart.
4. Explain the anatomy of the optic pathway.

II. PHYSIOLOGY: (4 x 5 = 20)

1. Explain the phases of swallowing.
2. Blood brain barrier.
3. Absorption of Vitamin B12.
4. Pulmonary function test.

III. BIO-CHEMISTRY: (3 x 5 = 15)

1. Uric acid metabolism.
2. Albumin.
3. Write briefly on lactic acidosis.

IV. PHARMACOLOGY: (3 x 5 = 15)

1. Newer oral anticoagulants.
2. Sodium Glucose Cotransporter 2 inhibitors (SGLT 2).
3. Monoclonal antibodies in the treatment of Alzheimer's disease.

V. MICROBIOLOGY: (3 x 5 = 15)

1. Strongyloides Stercoralis.
2. 80 year old retired teacher, an uncontrolled diabetic has presented with necrotizing fasciitis of the left lower limb. Write a note on the commonly implicated organisms in this patient. Add a note on choice and duration of antibiotic use.
3. Microbiological diagnosis of Clostridium Difficile infection.

VI. PATHOLOGY: (3 x 5 = 15)

1. Stages of pneumonia.
2. Paget's disease of Bones.
3. Histopathological changes in the kidneys in patients with diabetic nephropathy.
