

**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, abusy 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]**