

**UNIVERSITY OF JAFFNA, SRI LANKA**  
**FIRST EXAMINATION FOR MEDICAL DEGREES –OCTOBER 2022**  
**ACADEMIC YEAR 2019/2020**  
**PHYSIOLOGY: PAPER II**

Date: 08.10.2022

Time: 03 hours

ANSWER ALL THE TEN QUESTIONS

1. Explain:
  - 1.1. Haemoglobin of 8.5 g/dl with a MCV of 110 fl in a patient who underwent partial gastrectomy 2 years ago. (35 Marks)
  - 1.2. Increased bleeding tendency in patients with chronic liver cell disease. (30 Marks)
  - 1.3. In a patient with painful lump in the leg, White Blood Cell count was **18,000/mm<sup>3</sup>** with,  
N- 75 %  
L- 20%  
E- 2%  
M-2.7 %  
B- 0.3 % (35 Marks)
2. Explain the basis of:
  - 2.1. Increase in rate and depth of respiration in patients with uncontrolled Diabetes Mellitus. (40 Marks)
  - 2.2. Husky voice in hypothyroidism (30 Marks)
  - 2.3. Pigmentation of hands in Addison's disease (30 Marks)
3.
  - 3.1. Describe the process of swallowing (deglutition). (40 Marks)
  - 3.2. 22-year-old student complaints of repeated vomiting for 2 days. List five (5) clinical signs that should be monitored in this patient. (20 Marks)
  - 3.3. Arterial blood analysis of the above patient showed a pH of 7.48 and a HCO<sub>3</sub><sup>-</sup> concentration of 38 mEq/L. Explain the basis of these findings in his blood report. (40 Marks)
4. Explain:
  - 4.1. Reduced Glomerular filtration in patients with severe vomiting (50 Marks)
  - 4.2. Giving Frusemide to patients with pulmonary edema (50 Marks)
5. Explain the following:
  - 5.1. Undescended testis should be surgically corrected during early childhood. (35 Marks)
  - 5.2. Progesterone level is measured on day 21 of menstrual cycle. (35 Marks)
  - 5.3. Initiation of labour pain at the end of pregnancy (30 Marks)

6. Explain the physiological basis of the following:
  - 6.1. Oxygen saturation was 80 % in a patient with Chronic Obstructive Pulmonary Disease (COPD) admitted to the hospital (40 Marks)
  - 6.2. Progressive worsening of dyspnea in a patient with tension pneumothorax (40 Marks)
  - 6.3. Treating asthmatic patients with Salbutamol (20 Marks)
  
7.
  - 7.1. Describe the pressure changes in left ventricle during a normal cardiac cycle (40 Marks)
  - 7.2. Briefly explain:
    - 7.2.1 Ejection fraction of 40 % in a patient with myocardial infarction (30 Marks)
    - 7.2.2. Increased pulse pressure in aortic regurgitation (30 Marks)
  
8. Explain:
  - 8.1. Faintish feeling in elderly people when getting-up suddenly from bed after lying down for long time (30 Marks)
  - 8.2. The colour changes in the forearm during occlusion of blood supply and on releasing the occlusion (30 Marks)
  - 8.3. The reduction in blood supply to gastro intestinal tract in a patient with severe hemorrhage (40 Marks)
  
9. Briefly explain the physiological basis of the following:
  - 9.1. Distance for two-point discrimination is smaller in finger tips than in forearm (25 Marks)
  - 9.2. Muscles are wasted in lower motor neuron lesion (25 Marks)
  - 9.3. Patients with cerebellar lesions are unable to do rapid repeated movements (25 Marks)
  - 9.4. Gentle stroke in the injured area reduces the pain (25 Marks)
  
10. Briefly explain the basis of the following:
  - 10.1. Hyperopia can be corrected with appropriate lens (30 Marks)
  - 10.2. Treating a patient having night blindness with Vitamin A (35 Marks)
  - 10.3. Feeling of reverse rotation when suddenly stopping a rotational movement (35 Marks)