



UNIVERSITY OF JAFFNA, SRI LANKA  
FIRST EXAMINATION FOR MEDICAL DEGREES – MARCH 2023  
ACADEMIC YEAR 2020/2021  
PHYSIOLOGY: PAPER II

Date: 22.03.2023

Time: 03 hours

ANSWER ALL THE TEN QUESTIONS

1. Explain the basis of the following:
  - 1.1 Microcytic hypochromic anaemia in a pregnant mother (50 Marks)
  - 1.2 Giving more than one dose of a vaccine provides more protection than a single dose (50 Marks)
  
2. An 8-year-old child with Asthma was admitted with difficulty in breathing. Her respiratory rate was 44 per minute and Oxygen saturation was 85%. There were expiratory rhonchi on both sides of chest on auscultation.
  - 2.1 Explain the physiological basis of the following:
    - 2.1.1. Expiratory wheeze heard on auscultation (40 Marks)
    - 2.1.2. Respiratory rate (40 Marks)
  - 2.2 Name two (2) medications that can be used to treat asthma and give the basis of giving these medications (20 Marks)
  
3. A 22-year-old male was admitted following a road traffic accident. He had injury in left leg and there was severe bleeding. On admission to the hospital his pulse rate was 142/minute, BP was 80/60 mmHg and the finger nails were blue. He was given 3 units of 0.9% NaCl initially and then 6 units of cross matched blood was transfused.
  - 3.1 Explain the basis of the following on admission:
    - 3.1.1. Pulse rate and blood pressure (50 Marks)
    - 3.1.2. Blue finger nails (20 Marks)
  - 3.2 Briefly explain the complications that could be anticipated due to blood transfusion in this patient. (30 Marks)
  
4. Briefly explain:
  - 4.1 Ability of trained athletes to withstand higher intensity exercise without much increase in heart rate (30 Marks)
  - 4.2 Faintish feeling in an elderly female when suddenly getting up from bed. (35 Marks)
  - 4.3 Treating hypertension with Calcium channel blockers. (35 Marks)

5. Explain the basis of:
- 5.1. Hypotension in Addison's disease (30 Marks)
  - 5.2. Weight loss in uncontrolled diabetes mellitus (30 Marks)
  - 5.3. Importance of early diagnosis and treatment of congenital hypothyroidism. (40 Marks)
6. Explain the basis of the following:
- 6.1 Soldiers don't feel the pain due to injury in the battle field (35 Marks)
  - 6.2 Exaggerated deep tendon reflexes in upper motor neuron lesion (35 Marks)
  - 6.3 Fasciculation in lower motor neuron lesion (30 Marks)
7. Explain:
- 7.1 Absence of facial expression in Parkinson's disease (30 Marks)
  - 7.2 Spectacles are needed for many people for reading comfortably as they reach 50 years (35 Marks)
  - 7.3 Simple tests with tuning fork can differentiate conduction and sensorineural deafness (35 Marks)
8. 8.1. Briefly explain:
- 8.1.1. Osmotic diuresis (30 Marks)
  - 8.1.2. Tubulo-glomerular feedback (35 Marks)
- 8.2 Explain the basis of giving potassium supplements to patients on Frusemide (35 Marks)
9. 9.1. Briefly explain how the duodenal mucosa is protected from acidic chyme. (30 Marks)
- 9.2. Explain the basis of:
- 9.2.1. Regurgitation in Achalasia Cardia (35 Marks)
  - 9.2.2. Ascites in patients with Chronic Liver Cell Disease (35 Marks)
10. 10.1 Describe spermatogenesis (40 Marks)
- 10.2. Explain the basis of:
- 10.2.1. Increased risk of miscarriages at 8 – 12 weeks of pregnancy (30 Marks)
  - 10.2.2. Giving Dopamine agonist to a mother whose baby died on the third day after birth (30 Marks)

