



UNIVERSITY OF JAFFNA, SRI LANKA
FIRST EXAMINATION FOR MEDICAL DEGREES - JUNE 2023
ACADEMIC YEAR 2021/2022



PHYSIOLOGY – PAPER II

Date: 14.06. 2023

Duration: 9.00 a. m – 12.00 p. m (3 Hours)

Answer All the TEN Questions

1. Explain the physiological basis of the following:
 - 1.1. Hemoglobin level of 8.5 g/dl and MCV of 70 fL in a 45-year female with menorrhagia (35 Marks)
 - 1.2. Accumulation of neutrophils at the site of bacterial infection (30 Marks)
 - 1.3. Increased clotting time in a patient on Warfarin (35 Marks)

2. Explain the physiological basis of:
 - 2.1. Respiratory rate of 28/min in a patient admitted following injury to right chest and progressively increasing difficulty in breathing (40 Marks)
 - 2.2. FEV₁/FVC ratio of 60 % in a patient with Chronic Pulmonary Disease (40 Marks)
 - 2.3. Giving Prednisolone for patients with bronchial asthma (20 Marks)

3. Explain the changes in:
 - 3.1. ECG in right bundle branch block (30 Marks)
 - 3.2. Ejection fraction in a patient with infarction in left ventricle (30 Marks)
 - 3.3. Pulse pressure during pregnancy (40 Marks)

4.
 - 4.1 Describe the events in the left ventricle during a normal cardiac cycle (40 Marks)
 - 4.2. Explain the physiological basis of the following:
 - 4.2.1. Elderly people are at risk of rupture of cerebral vessels when straining for defecation (40 Marks)
 - 4.2.2. Glyceryl Tri Nitrate (GTN) is given for patients with angina pectoris (20 Marks)

5. Explain the physiological basis of the following:
- 5.1. Yellowish skin in hypothyroidism (25 Marks)
 - 5.2. Long term use of steroids can be dangerous (40 Marks)
 - 5.3. Patients with hyperparathyroidism are at risk of developing renal calculi (35 Marks)
6. Explain the physiological basis of:
- 6.1. Relaxation of muscle, when excessive force is applied on the muscle tendon (25 Marks)
 - 6.2. Pain sensation can be perceived even after damage to somato-sensory cortex (25 Marks)
 - 6.3. Ataxia after alcohol intake (25 Marks)
 - 6.4. Presence of wrist watch on the wrist is not felt by the person within a few minutes after wearing it (25 Marks)
7. Briefly describe:
- 7.1. Double vision (25 Marks)
 - 7.2. Masking effect in hearing (25 Marks)
 - 7.3. Deep sleep (25 Marks)
 - 7.4. Fluent aphasia (25 Marks)
8. Describe the following:
- 8.1. Glomerular filtration (50 Marks)
 - 8.2. Concentration of urine in the collecting duct (50 Marks)
- 9.
- 9.1. Describe the vomiting reflex (40 Marks)
 - 9.2. Explain the physiological basis of:
 - 9.2.1. Colicky pain in obstructed inguinal hernia (35 Marks)
 - 9.2.2. Giving omeprazole to patients with gastric ulcer disease (25 Marks)
10. Explain the physiological basis of the following:
- 10.1 Seminal Fluid Analysis is carried out first in couples with subfertility (40 Marks)
 - 10.2 To confirm ovulation, plasma progesterone level is measured (30 Marks)
 - 10.3 Privacy is required while breast feeding (30 Marks)

