

UNIVERSITY OF JAFFNA, SRI LANKA
FIRST EXAMINATION FOR MEDICAL DEGREES –August- 2020
Physiology: Paper II

Date: 26.08.2020

Time: 03 hours

ANSWER ALL THE TEN QUESTIONS

1. Describe:
 - 1.1. Water balance (gain & loss per day) in a healthy adult (40 Marks)
 - 1.2. Effect of high humidity on water balance (30 Marks)
 - 1.3. Effect of heavy exercise on a hot day on water balance (30 Marks)

2. Explain the mechanism of development of anaemia in the following situations:
 - 2.1. Chronic blood loss (25 Marks)
 - 2.2. Chronic kidney disease (25 Marks)
 - 2.3. Surgical removal of terminal ileum (25 Marks)
 - 2.4. Spherocytosis (25 Marks)

3. Describe:
 - 3.1. Cough reflex (40 Marks)
 - 3.2. Changes in pleural pressure during cough (40 Marks)
 - 3.3. Risks of chronic cough (20 Marks)

4.
 - 4.1. Define normal heart sounds and explain how they are produced (40 Marks)
 - 4.2. Define apex beat and explain briefly how it is produced (30 Marks)
 - 4.3. Outline the clinical significance of shifting of apex beat (30 Marks)

5. Explain the physiological basis of the following:
 - 5.1. Old people are at risk of rupture of arteries in brain or in heart during defecation specially if they are constipated (50 Marks)
 - 5.2. Patients with left ventricular failure find it difficult to breath when lying on bed (50 Marks)

6. Explain the physiological basis of the following:
 - 6.1. When a person is hungry, the insulin level is very low (25 Marks)
 - 6.2. Adequate sleep is necessary for babies to grow satisfactorily (25 Marks)
 - 6.3. When a person is excited, sweating occurs in palms and soles (25 Marks)
 - 6.4. Steroid drugs are given to patients after tissue transplantation (25 Marks)

7. Describe:
- 7.1. The features that make stomach a storage organ (20 Marks)
 - 7.2. The mechanisms that prevent reflux of gastric contents into oesophagus (40 Marks)
 - 7.3. Vomiting reflex (40 Marks)
8. Describe:
- 8.1. Glomerular filtration (40 Marks)
 - 8.2. The factors that affect glomerular filtration (30 Marks)
 - 8.3. Significance of loop of Henle in concentrating urine (30 Marks)
9. Describe the physiological basis of the following:
- 9.1. Males with sperm count of 20,000,000/ml are sub fertile (30 Marks)
 - 9.2. During pregnancy, breast doubles in size (35 Marks)
 - 9.3. Menstruation does not occur during lactation (35 Marks)
10. Describe the differences between:
- 10.1. Upper motor neuron lesion and lower motor neuron lesion (40 Marks)
 - 10.2. Cone vision and rod vision (30 Marks)
 - 10.3. Hearing loss due to defects in air conduction and bone conduction (30 Marks)