

UNIVERSITY OF JAFFNA, SRI LANKA
SECOND EXAMINATION FOR MEDICAL DEGREES -JUNE 2013
Physiology: Paper II

Date: 12.06.2013

Time: 03 hours

ANSWER ALL THE TEN QUESTIONS

1.
 - 1.1. Describe tissue fluid formation and reabsorption (40 Marks)
 - 1.2. Describe role of lymphatics in micro circulation (40 Marks)
 - 1.3. Explain how oedema caused by lymphatic obstruction can be differentiated from oedema caused by venous obstruction (20 Marks)

2. A 60 year old male was admitted to the emergency medical ward with a history of vomiting blood since 2 hours ago. He had headache in the morning for which he took two tablets of aspirin on his own. He gave a history of consuming toddy or kasipu depending on the availability over the last 35 years.
 - 2.1. Describe the relationship between aspirin and bleeding into the stomach (30 Marks)
 - 2.2. Describe the effect of alcohol consumption on clotting of blood (50 Marks)
 - 2.3. List two other causes of clotting defect (20 Marks)

3.
 - 3.1. Describe the transport of Oxygen in arterial blood (40 Marks)
 - 3.2. Describe the effect of CO on oxygen transport (20 Marks)
 - 3.3. List the types of hypoxia and give one condition as example for each type (40 Marks)

4.
 - 4.1. Describe the spread of impulse in the heart (40 Marks)
 - 4.2. Describe the effects of increased impulses in right and left vagus nerves on the electrical activity of the heart (20 Marks)
 - 4.3. Draw the normal ECG and correlate the waves and intervals with the electrical activity of the heart (40 Marks)

5.
 - 5.1. Describe the regulation of the blood pressure (50 Marks)
 - 5.2. Describe the changes in cardiovascular function on changing the posture from lying to standing (50 Marks)

6. A 55 year old manager of a company came to the hospital for medical checkup. His weight was 90 kg and height was 160 cm. He said that he passes large amounts of urine and he has to drink a lot of water. He also said that he is getting tired on performing simple tasks and feels that the muscles have become very weak. His fasting blood sugar was 300 mg/dl. Explain the possible causes / physiological basis of the following:
- 6.1. Body weight (15 Marks)
 - 6.2. Fasting blood sugar (25 Marks)
 - 6.3. Urine output (30 Marks)
 - 6.4. Muscle weakness (30 Marks)
7. Write notes on the following:
- 7.1. Gastrin (30 Marks)
 - 7.2. Secretin (30 Marks)
 - 7.3. Intestinal villi (40 Marks)
8. Describe the importance of the following investigations:
- 8.1. Creatinine clearance (40 Marks)
 - 8.2. Acidity of the Urine (30 Marks)
 - 8.3. Specific gravity of the urine (30 Marks)
9. Describe the physiological basis of the following:
- 9.1. Wearing tight underwear may result in subfertility in males (30 Marks)
 - 9.2. Females need double the amount of iron compared to males (30 Marks)
 - 9.3. Younger sister may become taller than elder brother around the age of 9-10 years if the age difference is only one year (40 Marks)
10. Describe the physiological basis of the following:
- 10.1. Gentle stroke near an injury reduces pain from the area (30 Marks)
 - 10.2. Pain arising from ureter due to renal stone is associated with changes in blood pressure and heart rate (30 Marks)
 - 10.3. Finger tips are more sensitive than forearm (40 Marks)

