



UNIVERSITY OF JAFFNA, SRI LANKA
FIRST EXAMINATION FOR MEDICAL DEGREES –November- 2014
Physiology: Paper II

Date: 14.11.2014

Time: 03 hours

ANSWER ALL THE TEN QUESTIONS

1. State the changes observed in the following in a person with anaemia due to intravascular haemolysis and describe their physiological basis:
 - 1.1. Colour of the urine (25 Marks)
 - 1.2. Reticulocyte count (25 Marks)
 - 1.3. MCHC (25 Marks)
 - 1.4. Colour of the feces (25 Marks)

2. Describe the risks/problems in the following conditions and their physiological basis.
 - 2.1. Hyperventilation (30 Marks)
 - 2.2. Deep sea diving (35 Marks)
 - 2.3. Tension pneumothorax (35 Marks)

3. Describe the following:
 - 3.1. Factors affecting venous return (50 Marks)
 - 3.2. Factors affecting peripheral resistance (50 Marks)

4. Describe the regulation of,
 - 4.1. Coronary circulation (50 Marks)
 - 4.2. Cerebral circulation (50 Marks)

5. Describe the physiological basis of the following in a patient with Cushing's disease:
 - 5.1. Excessive pigmentation (25 Marks)
 - 5.2. Poor resistance to infection (25 Marks)
 - 5.3. Osteoporosis (25 Marks)
 - 5.4. Moon face and thin limbs (25 Marks)

6.
 - 6.1. Describe the regulation of acid secretion in stomach (60 Marks)
 - 6.2. Describe how stomach is protected from acid (40 Marks)

7. Describe the physiological basis of the following:
- 7.1. When a healthy person is prevented from eating and drinking for 3 days, the urine output was around 400 ml/day (50 Marks)
 - 7.2. When a dehydrated person is given injection of Furosemide, he will pass large amounts of dilute urine (50 Marks)
8. Describe the regulation of the following:
- 8.1. Erection in genitals (30 Marks)
 - 8.2. Ovulation (40 Marks)
 - 8.3. Absence of menstruation in pregnancy (30 Marks)
9. Describe the physiological basis of the following:
- 9.1. Old people may feel faintish when they get up from bed in a rush. (35 Marks)
 - 9.2. Old people with lesion in basal ganglia have high risk of falling while walking (30 Marks)
 - 9.3. Multiple fracture of bones in road traffic accident (with minimal bleeding) may result in hypotension (35 Marks)
10. Describe the physiological basis of the following:
- 10.1. Red objects are not seen when illumination is very low (30 Marks)
 - 10.2. Old people with stiff joints are likely to have hearing loss (30 Marks)
 - 10.3. A person was seated in a revolving chair and rotated for 2 minutes. When the rotation was stopped suddenly, the person felt as rotating in the opposite direction. (40 Marks)