

UNIVERSITY OF JAFFNA, SRI LANKA
FIRST EXAMINATION FOR MEDICAL DEGREES – JUNE 2022
ACADEMIC YEAR 2019/2020
PHYSIOLOGY: PAPER II

Date: 29.06.2022

Time: 03 hours

ANSWER ALL THE TEN QUESTIONS

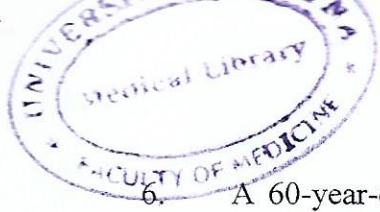
1. Explain the physiological basis of:
 - 1.1. Microcytic anaemia in a 31-year-old female with menorrhagia (30 Marks)
 - 1.2. Purpura in a patient who has bone marrow disease (35 Marks)
 - 1.3. Difficulty in breathing on exposure to pollen in flower garden (35 Marks)

2. Explain the physiological basis of the following:
 - 2.1. Poor wound healing in a patient on high dose of Prednisolone. (30 Marks)
 - 2.2. Hyperglycemia in acromegaly (20 Marks)
 - 2.3. Tetany in a patient who underwent total thyroidectomy. (50 Marks)

3. Explain the physiological basis of:
 - 3.1. Giving Oral Rehydration Solution (ORS) to children with severe diarrhoea. (50 Marks)
 - 3.2. Steatorrhoea in a patient who has undergone surgical removal of ileum (50 Marks)

4. Describe:
 - 4.1. Regulation of Glomerular Filtration Rate (GFR) in a patient with hypotension (50 Marks)
 - 4.2. Acid base regulation by kidney. (50 Marks)

5. Explain:
 - 5.1. The voice change in males during puberty (30 Marks)
 - 5.2. The weight gain during pregnancy (30 Marks)
 - 5.3. Mothers who complain of inadequate secretion of breastmilk immediately after delivery are encouraged to continue exclusive breastfeeding (40 Marks)



6. A 60-year-old man presented to hospital complaining of progressively worsening of difficulty in breathing on exertion. He has had severe myocardial infarction involving left ventricular musculature 2 months back.

On examination, he had a blood pressure of 100/60 mm Hg and heart rate of 108/min. His extremities were pale and cold. Echocardiogram showed ejection fraction of 35%. Chest x-ray was suggestive of pulmonary edema.

Explain the physiological basis of the changes of following in this patient:

- 6.1. Ejection fraction (25 Marks)
- 6.2. Blood pressure (25 Marks)
- 6.3. Heart rate (30 Marks)
- 6.4. Pale and cold extremities (20 Marks)

7. The patient mentioned in **Question 6** further complained that difficulty in breathing becoming worse on lying down and he is comfortable when propped up by three pillows. His respiratory rate was 28/min, and oxygen saturation was 88% on breathing room air.

Explain the Physiological basis of the following:

- 7.1. Difficulty in breathing becoming worse on lying down (40 Marks)
- 7.2. Oxygen saturation (30 Marks)
- 7.3. Respiratory rate (30 Marks)

8. Explain the changes in cardio vascular function in:

- 8.1. A pregnant woman in her latter part of pregnancy (50 Marks)
- 8.2. Moderate physical exercise (50 Marks)

9. Briefly explain the physiological basis of the following:

- 9.1. Gently stroking on an injured skin decreases the pain sensation (25 Marks)
- 9.2. Difficult to do the finger-nose test by patient with cerebellar lesion (25 Marks)
- 9.3. Absent knee jerk immediately after a T12 vertebral fracture (25 Marks)
- 9.4. Exaggerated knee jerk after 3 weeks of T12 vertebral fracture (25 Marks)

10. Briefly Describe:

- 10.1. Visual acuity (25 Marks)
- 10.2. Conduction deafness (25 Marks)
- 10.3. Microsleep (25 Marks)
- 10.4. Anomic aphasia (25 Marks)