



FACULTY OF ALLIED HEALTH SCIENCES
 UNIVERSITY OF RUHUNA
 Department of Medical Laboratory Science
 Year End Examination, Year 1 - 10th Batch - 2019
 Human Biology (MLS 1103) – Theory II (SEQ)

Wednesday 06th February 2019

Time: 10.15 a.m. – 11.15 a.m.

Duration: 1 hour



Index Number:

Answer one question from PART A and one question from PART B in the spaces given.

96

PART A- Physiology

1.

1.1 State the normal pH in plasma. (5 marks)

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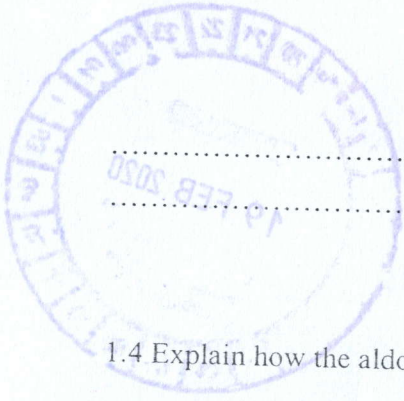
1.2 A patient has serum HCO₃⁻ of 14 mmol/L (reference range 22-26 mmol/L) and pH of 7.28 in arterial blood. What is the acid-base disturbance in this patient? State reasons for your answer (15 marks)

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1.3 Explain the mechanisms in the body, which will help to compensate for this acid-base disturbance. (30 marks)

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1.4 Explain how the aldosterone regulates the Na^+ and K^+ concentrations in the blood. (25 marks)

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1.5 Briefly explain the role of parathyroid hormone in calcium homeostasis. (25 marks)

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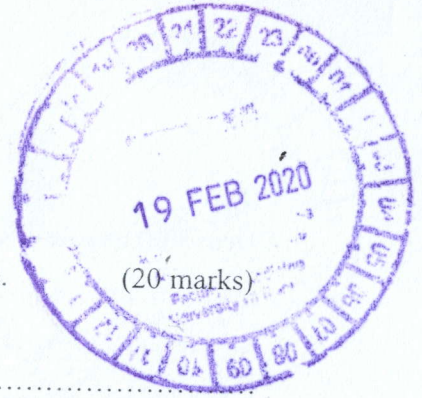
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2.

2.1 Explain the term 'isovolumetric contraction' in relation to the left ventricle.

(20 marks)

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2.2 Describe the changes in cardiac output when heart rate increases from 80 to 200 beats/minute.

(20 marks)

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2.3 Explain the role of baroreceptors in cardiovascular regulation.

(20 marks)

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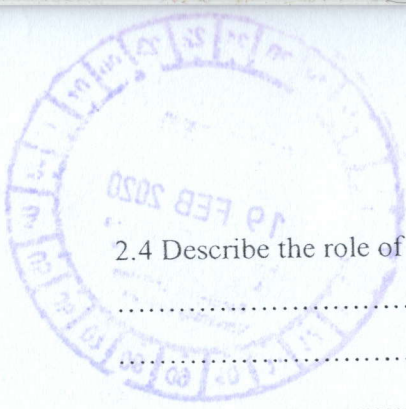
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2.4 Describe the role of Ca⁺² in muscle contraction.

(20 marks)

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2.5 Explain why neostigmine is used in the treatment of myasthenia gravis.

(20 marks)

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