



MACHAKOS UNIVERSITY

University Examinations 2016/2017

SCHOOL OF PURE AND APPLIED SCIENCES

DEPARTMENT OF BIOLOGICAL SCIENCES

THIRD YEAR FIRST SEMESTER EXAMINATION FOR

BACHELOR OF EDUCATION (SCIENCE)

BACHELOR OF SCIENCE (BIOLOGY)

SZL 306: HUMAN BIOLOGY

DATE: 31/7/2017

TIME: 8:30 – 10:30 AM

INSTRUCTIONS

Answer Question One and Any Other Two Questions

1.
 - a) Outline 4 features of man that make him superior than any other animal (2 marks)
 - b) Describe the importance of the hypothalamus (2 marks)
 - c) Explain the following disorders (3 marks)
 - i. Emphysema
 - ii. Arrhythmia
 - iii. Albuminuria
 - d) Differentiate between the following
 - i Systemic and pulmonary circulation (2 marks)
 - ii Serous membranes and mucous membranes (2 marks)
 - iii Tidal air and dead air (2 marks)
 - e) Explain how each of the following is adapted to their function
 - i Glomerulus (2 marks)
 - ii Red blood cells (2 marks)
 - iii Arteries (2 marks)
 - f) Outline the importance of each of the following in the human body (3 marks)
 - i Magnesium
 - ii Islets of Langerhans
 - iii Heparin

- g) Explain two (2) roles of bile in humans (2 marks)
 - h) Explain how the automatic activity of human heart is achieved. (3 marks)
 - i) Explain three (3) physiological changes that occur in a female during gestation. (3 marks)
2. Explain the following statements in detail
- a) physiological role of any five minerals needed in large amounts (10 marks)
 - b) Homeostatic functions of the human blood (10 marks)
3. a) Describe the structure and function of the conducting division of the human respiratory system. (10 marks)
- b) Discuss how the respiratory conducting division is adapted to its function (10 marks)
- c) Describe the following in details.
- i Functional role of the liver in the human body (10 marks)
 - ii Mechanisms by which the human body rids itself of various wastes from metabolic pathways. (10 marks)
- d) Discuss the role of hormones in the human reproductive process (20 marks)