

CHUKA



UNIVERSITY

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**UNIVERSITY EXAMINATIONS**

**EXAMINATION FOR THE AWARD OF DEGREE OF  
BACHELOR OF SCIENCE IN BIOMEDICAL TECHNOLOGY**

**BMET 221: PATHOPHYSIOLOGY**

**STREAMS: BSC (BIOMED)**

**TIME: 2 HOURS**

**DAY/DATE: MONDAY 10/12/2018**

**11.30 AM – 1.30 PM**

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**INSTRUCTIONS:**

**ANSWER QUESTION ONE AND ANY OTHER TWO QUESTIONS**

**QUESTION ONE (30 MARKS)**

- (a) Cells adapt to their environment to escape and protect themselves from injury. Outline four (4) most significant adaptive changes that can occur in cells. [4 marks]
- (b) Explain four (4) ways through which oxidative free radicals can be damaging to cells. [4 marks]
- (c) Describe any three (3) types of necrosis that can occur in tissues as a result of cellular injury. [6 marks]
- (d) Explain how an increase in capillary hydrostatic pressure and a decrease in capillary oncotic pressure cause edema. [6 marks]
- (e) Describe the two general types of disorders associated with target cell insensitivity to hormones. [4 marks]
- (f) Briefly describe the pathophysiology of primary hypertension. [6 marks]

**QUESTION TWO (20 MARKS)**

- (a) Describe the pathophysiology of Type 1A diabetes mellitus. [10 marks]

- (b) Describe the mechanisms through which obesity contributes to the development of insulin resistance. [10 marks]

**QUESTION THREE (20 MARKS)**

- (a) Describe the clinical manifestations of the different types of aneurysms. [10 marks]

- (b) Describe the characteristics of the various types of emboli based on their occurrence. [10 marks]

**QUESTION FOUR (20 MARKS)**

- (a) Describe the features that characterize Macrocytic-Normochromic Anemias. [10 marks]

- (b) Describe the pathophysiology of Pernicious Anemia. [10 marks]
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