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CHUKA



UNIVERSITY

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**UNIVERSITY EXAMINATIONS**

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

**BIOC 424: BIOCHEMICAL ENDOCRINOLOGY**

**STREAMS: Y4S1 BSC BIOCHEM**

**TIME: 2 HOURS**

**DAY/DATE: WEDNESDAY 4/12/2019**

**8.30 A.M – 10.30 A.M**

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**INSTRUCTIONS**

**Answer question one and any other two questions**

**Do not write on the question paper**

**QUESTION ONE 30 MARKS**

**QUESTION ONE (30 MARKS)**

(a) Briefly discuss the general functions of vertebrate hormones. [6 marks]

(b) With the aid of diagrams, explain the chemical structures of estrogen hormones. [6 marks]

(c) Discuss in detail the biosynthesis and metabolism of testosterone. [6 marks]

(d) Hyperadrenocorticism is the excessive supply of adrenal cortical steroids. Discuss. [6 marks]

(e) Insulin deficiency leads to diabetes mellitus in man. Give the clinical manifestations of this disease. [6 marks]

**QUESTION TWO (20 MARKS)**

- (a) Discuss in detail the biosynthesis, structure and function of the hormone glucagon. [10 marks]
- (b) Describe the disorders that result from insufficient secretion of pituitary hormones (hypopituitarism) [10 marks]

**QUESTION THREE (20 MARKS)**

- (a) Gastrin, secretin and cholecystokinin are hormone secreted by mucosal cells of the gastrointestinal tract. Discuss their major functions. [10 marks]
- (b) Discuss in detail hyperthyroidism and hypothyroidism. [10 marks]

**QUESTION FOUR (20 MARKS)**

- (a) Discuss in detail the structure and functions of epinephrine and norepinephrine. [10 marks]
- (b) Describe the biosynthesis of various types of eiconasoids from arachidonic acid. [10 marks]
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