



TECHNICAL UNIVERSITY OF MOMBASA

School of Applied and Health Sciences
DEPARTMENT OF PURE AND APPLIED SCIENCES

UNIVERSITY EXAMINATION FOR:

BACHELOR OF SCIENCE IN BIOCHEMISTRY

ABC 4307: BIOCHEMICAL ENDOCRINOLOGY

END OF SEMESTER EXAMINATION

SERIES: DECEMBER 2024 SERIES

TIME: 2 HOURS

DATE: DECEMBER 2024

Instructions to Candidates

You should have the following for this examination

Answer Booklet, examination pass and student ID

This paper consists of **FIVE** questions. Attempt question ONE (Compulsory) and any other TWO questions.

Do not write on the question paper.

Question One (30 Marks)

- (i) Name any three pituitary glycoprotein hormones (3 marks)
- (ii) Explain the function of the hormone produced by the parafollicular cells (2 Marks)
- (iii) List any four of the clinical signs of a thyroid function problem (4 Marks)
- (iv) Give the meaning of the following terms
 - a) Hirsutism (1 Mark)
 - b) Gynecomastia (1 Mark)
 - c) Acromegaly (1 Mark)
- (v) Explain how glucagon affects any two metabolic pathways in humans (4 marks)
- (vi) Explain three ways that the parathyroid hormone increases blood calcium levels (3 Marks)
- (vii) Give three functions of melatonin hormone (3 Marks)
- (viii) Name two adrenal gland hormones and the associated secretory regions for each (2 marks)

- (ix) Explain four function of prostaglandins in reproduction (4 Marks)
- (x) Differentiate between type I and type II primary osteoporosis (2 Marks)

Question Two (20 Marks)

- (i) Describe the hormone mechanism that occurs when a receptor interacts with a G-protein (8 Marks).
- (ii) Discuss the functions of any six hypothalamus regulating hormones (12 Marks)

Question Three (20 Marks)

- (i) Discuss the various classes of hormones and hormonally active compounds (15 Marks)
- (ii) Give the functions of the following hormones
 - a) Oxytocin (2 Marks)
 - b) Antidiuretic hormone (3 Marks)

Question Four (20 Marks)

- (i) Explain the step involved in the synthesis and secretion of the thyroid hormones (16 marks)
- (ii) State any four interference points of anti-thyroid agents (4 Marks)

Question Five (20 Marks)

- (i) Discuss the factors that contribute to glucose homeostasis (10 Marks)
- (ii) Explain the effects of epinephrine on liver metabolism (10 Marks)