



## TECHNICAL UNIVERSITY OF MOMBASA

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Faculty of Applied and Health Sciences  
Department of Pure & Applied Sciences

**UNIVERSITY EXAMINATION FOR:  
BACHELOR OF SCIENCE IN BIOCHEMISTRY  
ABC 4304: REPRODUCTIVE BIOCHEMISTRY  
SUPP/SPECIAL EXAMINATION**

**SERIES:** PickyearDEC 2024

**TIME:**2HOURS

**DATE:**Pick DateDecPick Year2024

### **Instructions to Candidates**

You should have the following for this examination

*-Answer Booklet, examination pass and student ID*

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

**Do not write on the question paper.**

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### **QUESTION ONE**

**(a)** Discuss the following reproductive disorders.

i) Hypogonadism

**(2 marks)**

ii) Polycystic Ovarian Syndrome (PCOS)

**(2 marks)**

**(b)** Identify FOUR hormones involved in maintaining pregnancy, and state their functions.

**(4 marks)**

**(c)** Identify the hormones that regulate parturition and state their roles. **(5 marks)**

**(d)** State the role of prolactin and oxytocin in milk production and ejection.

**(2 marks)**

**(e)** Explain how neonates acquire passive immunity before their immune system matures.

**(2 marks)**

**(f)** Define Artificial Insemination (AI)

**(1 mark)**

**(g)** Identify the chronological stages of Multiple Ovulation and Embryo Transfer (MOET) process.

**(4 marks)**

**(h)** State THREE ethical concerns related to cloning.

**(3 marks)**

**(i)** Differentiate between menopause and andropause.

**(2 marks)**

**(j)** Mention THREE symptoms associated with menopause.

**(3 marks)**

### **QUESTION TWO**

**(a)** Explain how energy availability affect reproductive function in males and females.

**(8 marks)**

- (b) Describe the structure and function of the testes and ovaries in human reproduction. **(12 marks)**

### **QUESTION THREE**

- (a) Explain the genetic and hormonal factors that determine sex differentiation in humans. **(10 marks)**
- (b) Discuss the contributions of the seminal vesicles, prostate gland, and bulbourethral glands to semen, and successful fertilization. **(10 marks)**

### **QUESTION FOUR**

- (a) Explain the process of oogenesis and compare it to spermatogenesis in terms of timing, number of gametes produced, and regulation. **(12 marks)**
- (b) Describe the function of pituitary gonadotrophins and their role in reproductive health. **(8 marks)**

### **QUESTION FIVE**

- (a) Discuss FIVE biochemical causes of male infertility. **(10 marks)**
- (b) Describe the phases of the menstrual cycle, highlighting the hormonal regulation involved in each process. **(10 marks)**