

CHUKA



UNIVERSITY

UNIVERSITY EXAMINATIONS

FOURTH YEAR EXAMINATION FOR THE AWARD OF DEGREE  
OF BACHELOR OF SCIENCE IN BIOCHEMISTRY

BIOC 426: REPRODUCTIVE BIOCHEMISTRY

STREAMS: BSC (BIOCHEM)

TIME: 2 HOURS

DAY/DATE: MONDAY 06/04/2020

8.30 A.M. – 10.30 A.M.

**INSTRUCTIONS:**

- Answer question ONE (COMPULSORY) and any other TWO questions
- Sketch diagrams may be used whenever they may help to illustrate your answer
- Do not write anything on the question paper
- This is a closed book exam. No reference materials are allowed in the examination room
- There will be no use of mobile phones or any other unauthorized materials
- Write your answers legibly and use your time wisely

**QUESTION ONE (30 MARKS) – COMPULSORY**

- (a) Demonstrate the biosynthesis pathway of prostaglandins and explain their role during parturition. [8 marks]
- (b) Explain three causes of male infertility. [3 marks]
- (c) Discuss major hormonal changes that occur in female mammals during pregnancy. [8 marks]
- (d) Discuss the classification of oral contraceptives, formulations and their mode of action. [8 marks]
- (e) Distinguish three fundamental functions of female reproductive tract. [3 marks]

**QUESTION TWO (20 MARKS)**

- (a) Discuss three accessory glands and their functions associated with male reproductive system in mammals. [6 marks]
- (b) List the signs and symptoms of toxæmia during pregnancy. [6 marks]
- (c) Mention few signs of a problem associated with menstrual cycle in human. [5 marks]
- (d) Why do you think that a woman may feel cramping pains in her abdomen when she is menstruating? [3 marks]

**QUESTION THREE (20 MARKS)**

- (a) Explain hormonal control of oogenesis. [5 marks]
- (b) Discuss in detail classification of reproduction based on the way mammals reproduce. [8 marks]
- (c) Discuss conditions that can alter a normal menstrual cycle. [4 marks]
- (d) Suggest how the relatively high concentration of artificially produced oestrogen and progesterone in contraceptive pills prevents pregnancy in women who take the pills regularly as prescribed. [3 marks]

**QUESTION FOUR (20 MARKS)**

- (a) Discuss the hormonal control of spermatogenesis. [8 marks]
  - (b) Discuss three stages the endometrium goes through during menstrual cycle. [8 marks]
  - (c) Discuss major functions of testosterone. [4 marks]
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