



FACULTY: Basic and Applied Sciences
DEPARTMENT: Physical and Chemical Sciences
SECOND SEMESTER EXAMINATIONS
2018/2019 ACADEMIC SESSION

COURSE CODE: 402
COURSE TITLE: Principles of Endocrinology
DURATION: 2 hours

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HOD's SIGNATURE

TOTAL MARKS: 60

Matriculation Number: _____

INSTRUCTIONS:

1. Write your matriculation number in the space provided above and also on the cover page of the exam booklet.
2. This question paper consists of 1 page.
3. Answer all questions in the exam booklet provided.
4. At the end of this examination, place the question paper inside the exam booklet.
5. **Attempt any (3) out of the five (5) questions**

- 1a) Briefly describe the synthesis of the thyroid hormones. (8 marks)
- 1b) With the aid of a sketch diagram describe the synthesis of leukotriene, Prostacyclin and thromboxanes. (6 marks)
- 1c) Explain the inhibitory effect of aspirin on prostaglandin (6 marks)
- 2a) Write short notes on the followings. (20marks)
- i) Calmodulin-calcium system
 - ii) Phosphodiesterase
 - iii) Hormone responsive elements
 - iv) Feedback control on thyroxine.
- 3a) State the hypothalamic-pituitary-target gland axis control of the following hormones. (8 marks)
- i) Estrogen
 - ii) Cortisol
 - iii) Thyroxine
 - iv) Testosterone
- 3b) State the differences between the secretion and storage of peptide and steroid hormones (6 marks)
- 3c) State 2 similarities and 2 differences between phosphatase and protein kinase. (6 marks)
- 4) With the aid of a diagram, describe how adrenaline exerts its hormonal effect using calcium and inositol 1,4,5 triphosphate (IP₃) as second messengers. (20 marks)
- 5a) Describe the synthesis of insulin. (8 marks)
- 5b) Write short note on the secretion and synthesis of parathyroid hormone. (6 marks)
- 5c) State the functions of the different types of G-proteins. (6 marks)