ELIZADE UNIVERSITY, ILARA-MOKIN, ONDO STATE, NIGERIA

BASIC & APPLIED SCIENCES

BIOLOGICAL SCIENCES

FIRST SEMESTER EXAMINATION

2018/2019 ACADEMIC SESSION

COURSE CODE: BIO 303
COURSE TITLE: GENETICS II
DURATION: 2 HOURS

NAME: PETER ..... **MAT. No:** .....

INSTRUCTION

Answer any THREE questions.

All questions carry equal marks

QUESTIONS

1. (a) Discuss the steps involve in protein synthesis.
   (b) What are codons and anticodons? Explain the features of the genetic code.
   (c) Explain the central dogma in relation to the functional and evolutionary dogma(s) of genetic information flow.

2. (a). Give detail explanation of Chain Termination DNA Sequencing.
   (b) Explain Shortgun and Chromosomes walking as techniques in genome analysis.

3. (a) Enumerate three ways in which you can classify gene mutations.
   (b) What are the effects of Frameshift mutations?
   (c) Discuss point mutation on the first (1^{st}), second (2^{nd}) and third (3^{rd}) base position of codons.

4. (a) Compare and contrast Eukaryotic and Prokaryotic gene expression systems.
   (b) Write on the recent trends in genetic engineering in the following fields;
      i. Medicine
      ii. Agriculture
      iii. Industrialization
      iv. Environmental

5. (a) (i) What is a reproductive barrier? (ii) Give three (3) examples of reproductive barriers.
   (b) (i) Explain inbreeding depression. (ii) How does inbreeding differ from outbreeding?
   (c) Explain the following:
      i. Directional selection
      ii. Stabilizing selection
      iii. Frequency-dependent selection