# KISII UNIVERSITY
# UNIVERSITY EXAMINATIONS

**THIRD YEAR EXAMINATION FOR THE AWARD OF THE DEGREE OF BACHELOR OF FISHERIES AND AQUACULTURE**
**FIRST SEMESTER 2022/2023**
**(SEPTEMBER - DECEMBER, 2022)**

**FIAQ 342: FISH POPULATION GENETICS**

**STREAM: Y3 S1** **TIME: 2 HOURS**

**DAY: FRIDAY, 3:00 P.M – 5:00 P.M** **DATE: 23/12/2022**

***INSTRUCTIONS:***
***1. Do not write anything on this question paper.***
***2. Answer Question ALL Questions in section A (Compulsory) and any other THREE Questions in section B.***

**SECTION A: (40 Marks)**

1)Explain the meaning of the following terms. (5 marks)
   a) alleles
   b) fish populations

2) Differentiate between genetic loci and genetic distance. (5 marks)

3)Briefly comment on how polymorphism brings changes in a fish population. (5 marks)

4) What is the Hard Weinberg equilibrium is it relates to population genetics. (5 marks)

5)Briefly explain genetic drift of a fish population. Why is starch electrophoresis preferred offer polyacrylate. (5 marks)

7) How does inbreeding brings about changes in a fish population. (5 marks)

8) Differentiate between homozygosity and heterozygosity in a fish population. (5 marks)

**SECTION B**

9) Discuss how human activities affect the genepool of a fish population. (10 marks)

10) Explain how the actual fish population size can be estimated using the theory of population genetics. (10 marks)

11) Discuss the factors that naturally bring about genetic variation in a fish population (mutation, migration, selection and genetic drift. (10 marks)

12) Using examples explain any three molecular genetic markers are used in differentiating among fish populations or sub- populations. (10 marks)

13) Using illustrations explain how DNA is manufactured in an animal cell. (10 marks)