EGERTON UNIVERSITY

UNIVERSITY EXAMINATIONS

REGULAR -NJORO CAMPUS

SECOND SEMESTER, 2021/2022 ACADEMIC YEAR

THIRD YEAR EXAMINATION FOR THE DEGREE OF BACHELOR OF SCIENCE IN NATURAL RESOURCE MANAGEMENT

NARE 352: ECOLOGICAL SURVEYS AND TECHNIQUES

STREAM: BSc NARE, TOHM & ENSCI (Y3S2) **TIME: 2 HRS**

EXAMINATION SESSION: JULY **YEAR: 2022**

INSTRUCTIONS:

(i) Answer ALL questions in Section A and any two in section B

(ii) Some formulae are provided at the end of the question paper

(iii) Do not write on the question paper

SECTION A (40 MARKS)

Question One

a) Define the following terms commonly used in ecological surveys and techniques:

i). Sampling frame **(1 Mark)**
ii). Basal cover **(1 Mark)**

b) Distinguish between the following:

i). Habitat and habitat type **(2 Marks)**
ii). Abstract and executive summary **(2 Marks)**

Question Two

Write short notes on the following:

i). Remote sensing **(4 Marks)**
ii). The "Discussion" section of an ecological monitoring report **(4 Marks)**
iii). Systematic sampling **(4 Marks)**

Question Three

a) Give three reasons why proper ecological database management is important **(6 Marks)**

b) Outline six basic descriptors that should be contained ecological database. **(6 Marks)**

Question Four

a) Define reverse planning, and give four reasons for proper planning before embarking on an ecological survey. **(6 Marks)**

b) Outline the steps for deciding whether data can be collected in the time. **(4 Marks)**

SECTION B (30 MARKS)

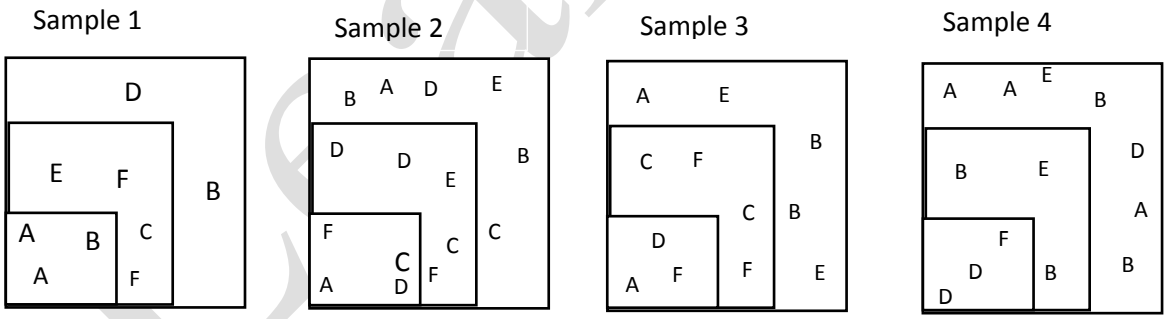
Question Five

a) Write short notes on plant density. **(7 Marks)**

b) Describe how to estimate plant density using the PCQ method. **(8 Marks)**

Question Six

a) The Figure below shows the location of individuals of various herbaceous plant species (A" F) within quadrats of different sizes (small, medium and large) placed in a nested design at four locations (Sample 1-4) across a study site. For each quadrat size, calculate the frequency of each species in the study site. **(9 Marks)**



b) Outline four suitable situations for the method applied above (a). **(6 Marks)**

Question Seven

a) Illustrate any four types of graphs commonly employed to present ecological data, and briefly explain the use each graph type. **(8 Marks)**

b) You intend to estimate the population size of wild large herbivore species in a conservancy. Formulate a data collection protocol for this study. **(7 Marks)**

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