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**UNIVERSITY EXAMINATIONS
2022/2023 ACADEMIC YEAR**

THIRD YEAR SECOND SEMESTER

SPECIAL/SUPPLEMENTARY EXAMINATION

FOR THE DEGREE OF BACHELOR OF SCIENCE IN BIOLOGY

COURSE CODE: SBT 321

COURSE TITLE: PALYNOLOGY AND BIOSYSTEMATICS

DATE: 10TH AUGUST 2023

TIME: 2.00 – 4.00 PM

INSTRUCTIONS TO CANDIDATES

Answer Question one (1), and any other two (2), Questions. Question one is compulsory and carries 30 marks, the other Questions carry 20 marks each.

TIME: 2 Hours

QUESTION ONE

- a) Describe the main plant groupings during the Precambrian, mesozoic, palaeozoic eras (3 Marks).
- b) With illustrations enumerate the polar apertures (4 Marks).
- c) Define biosystematics and list two steps in biosystematic investigation (3 Marks).
- d) List down three traits of pollen that favor zoogamy (3 Marks).
- e) Distinguish the terms "apomixis" and "amphimixis" (3 Marks).
- f) What is the importance of methods in experimental taxonomy to taxonomic research and interpretation? (3 Marks).
- g) Outline the steps of studying pollen in old water samples (3 Marks).
- h) With a diagram illustrate the parts of the pollen grain at the tetrad stage (4 Marks).
- i) Explain the major biosystematics categories proposed by Danser (4 Marks).

QUESTION TWO

Compare biosystematics and modern taxonomy (20 Marks).

QUESTION THREE

Write an essay on the formation and development of Pollen grains (20 Marks).

QUESTION FOUR

Discuss the procedures and methods in the study of biosystematics (20 Marks).

QUESTION FIVE

Describe the isolation mechanisms that hinder speciation (20 Marks).