



CRAWFORD UNIVERSITY
FAITH CITY, IGBESA, OGUN STATE, NIGERIA

COLLEGE OF NATURAL AND APPLIED SCIENCES
HARMATTAN SEMESTER EXAMINATIONS, 2022/2023 SESSION

B.Sc. GEOLOGY AND MINERAL SCIENCES
GEM 441- ADVANCED MICROPALAEONTOLOGY AND PALYNOLOGY UNITS: 3

TIME ALLOWED: 3 HOURS

INSTRUCTION: ANSWER ANY FOUR QUESTIONS

Illustrate your answers with large, clearly labelled diagrams where necessary

1. What are microfossils? Discuss their practical values in geological studies and their applications in the oil industry. Give 10 examples of microfossil. (15marks)
2. a. The Protista are microscopic unicellular organisms. Describe anyone of them that can be fossilized based on their morphology and shell composition. (10 Marks)
b. Classify Foraminifera based on its test composition. (5 Marks)
3. a. What are Calcareous Nannofossils? (3 Marks)
b. Explain the advantages and disadvantages of the application of Calcareous Nannofossils. (3 Marks)
c. Give a detailed description of the morphology of calcareous nannofossil. (6 Marks).
4. a. Explain the term "Palynology" and give 6 examples of palynomorphs. (7 Marks)
b. Discuss the application of palynology to the following:
(i) Biostratigraphy and (4 Marks)
(ii) Paleoenvironment. (4 Marks)
5. a. Explain the differences between spores and pollen grains. (3 Marks)
b. Spore tetrad formation can occur in two (2) ways. With the aid of suitable diagrams describe the two. (5 Marks)
c. Describe the morphology of spore (7 Marks)
6. Explain the various stages involved in the:
a. Collection of material samples for Calcareous nannofossil analysis (5 Marks)
b. Laboratory preparation of samples for the chosen microfossil and (5 Marks)
c. Observations and Interpretation. (5 Marks)