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University Examinations 2022/2023

FOURTH YEAR SECOND SEMESTER SPECIAL/SUPPLEMENTARY EXAMINATION
FOR THE DEGREE OF BACHELOR OF SCIENCE IN BIOTECHNOLOGY

SHC 3251: INTEGRATED BIOCHEMICAL TECHNIQUES I

DATE: AUGUST 2023 **TIME: 2 HOURS**

INSTRUCTIONS: *Answer question **one** and any other **two** questions*

QUESTION ONE (30 MARKS)

a) Explain the factors that affect fluorescence (3 marks)
b) Describe briefly the principle of ion exchange chromatography (4 marks)
c) Distinguish between liquid and solid scintillation counting (3 marks)
d) List the detectors used in Gas chromatography (3 marks)
e) Outline the applications of manometry (3 marks)
f) Distinguish excitation and emission wavelengths (3 marks)
g) Describe the common techniques used for detecting colorless spots in paper chromatography (3 marks)
h) Explain the term “Developing” in chromatography (2 marks)
i) Describe the principle of Thin layer chromatography (3 marks)
j) Outline the applications of tracer techniques in Biology

QUESTION TWO (20 MARKS)

a) Describe the basic principle of paper chromatography (10 marks)

b) Discuss the operations of a Geiger Muller apparatus (10 marks)

QUESTION THREE (20 MARKS)

a) Discuss the instrumentation of GC (10 marks)

b) Explain the principle of separation in ion exchange chromatography (10 marks)

QUESTION FOUR (20 MARKS)

a) Discuss the separation modes of HPLC (10 marks)

b) Discuss different radioisotopes used in Biomedical and clinical uses (10 marks)