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University Examinations 2022/2023

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

SHC 3252: PROTEIN BIOCHEMISTRY

DATE: AUGUST 2023

TIME: 2 HOURS

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

QUESTION ONE (30 MARKS)

- Describe briefly the steps for determining the primary structure of proteins (3 marks)
- Explain molecular modelling in determination of protein 3-D structure (3 marks)
- Outline the functional roles of proteins (3 marks)
- Describe hydrophobic interaction chromatography (3 marks)
- Explain the role of chaperones in protein folding (3 marks)
- Describe briefly determination of protein structure and function (4 marks)
- Explain the determination of disulphide bridges in proteins (3 marks)
- Discuss the Sanger's reaction (4 marks)
- Explain briefly proteomics (4 marks)

QUESTION TWO (20 MARKS)

- Discuss the following techniques used in protein purity assessment:
 - SDS – PAGE (5 marks)



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- (ii) Isoelectric focussing (5 marks)
b) Describe X-ray crystallography (10 marks)

QUESTION THREE (20 MARKS)

- a) Discuss quantitative estimation of proteins (12 marks)
b) Describe the primary structure of Insulin (8 marks)

QUESTION FOUR (20 MARKS)

- a) Discuss mass spectrometry method for evaluating protein structure (10 marks)
b) Describe the structural organization of proteins (10 marks)

