



W1-2-60-1-6

JOMO KENYATTA UNIVERSITY OF AGRICULTURE AND TECHNOLOGY

UNIVERSITY EXAMINATION 2022/2023

MSC, MEDICINAL CHEMISTRY

SECOND SEMESTER SUPPLEMENTARY EXAMINATION

TPS 3106: CHEMISTRY OF PROTEINS AND PEPTIDES

DATE: DECEMBER 2023

TIME: THREE HOURS

Instructions : Answer any FOUR of the SIX questions

1. Describe the chemical sensitivity of the different lipid-modified peptides. (25 marks)
2. Describe the chemo-enzymatic approach towards glycopeptide synthesis. (25 marks)
3. Using suitable examples, illustrate how the aptamer technology has been utilized to develop new drugs. (25 marks)
4. Dendrimers bearing peptide moieties with predetermined secondary structure are useful tools in the *de novo* design of proteins that may be applied as antigens and immunogens for serodiagnosis and for drug delivery. Discuss. (25 marks)
5. The synthesis of novel protein-based therapeutics may be hastened by adoption of the synthesis-in-teabags approach. Discuss how this technique may be useful citing the advantages and disadvantages of such a combinatorial synthesis strategy.
6. Peptides and proteins have seen limited use as clinically viable drugs owing to a myriad of shortcomings. Suggest viable improvements to circumvent some of these shortcomings.

