

CHUKA UNIVERSITY
UNIVERSITY EXAMINATIONS 2020/2021
SECOND SEMESTER EXAMINATION
BMET 337: DRUG DELIVERY SYSTEMS

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

Questions

Question 1 (Compulsory) (30 marks)

- a) Explain 5 limitations of conventional drug delivery systems. (5 marks).
- b) Describe the difference between Rate- Preprogrammed Drug Delivery System and Activation- Modulated Drug Delivery System. (4 Marks)
- c) Explain the role of microspheres in drug delivery and targeting. (5 Marks)
- d) Outline 5 formulation of microparticulates for intraocular drug delivery. (5 Marks)
- e) Explain 7 factors affecting percutaneous drug absorption. (7 Marks)

- f) Highlight 4 features of adeno-associated virus that make it suitable tool for gene transfer in gene therapy (4 Marks)

Question 2 (20 marks)

- a) Describe in detail the various release mechanisms employed in diffusion-controlled drug delivery and targeting. (10 Marks)
- b) Discuss the demerits associated with oral drug delivery systems. (10 marks)

Question 3 (20 marks)

- a) Discuss 5 properties of an “ideal” drug delivery system. (10 Marks)
- b) Describe with appropriate examples the use of liposomes in drug delivery and targeting. (10 marks)

Question 4 (20 marks)

- a) Using an appropriate diagram, outline the principles of iontophoresis. (10 marks)
- b) Describe the structure, composition and clinical application of Zoladex implant. (10 marks)