

CHUKA



UNIVERSITY

**UNIVERSITY EXAMINATIONS
RESIT/SPECIAL EXAMINATION**

**EXAMINATION FOR THE AWARD OF DEGREE OF BACHELOR OF SCIENCE IN
BIOMEDICAL TECHNOLOGY**

BMET 337: DRUG DELIVERY SYSTEMS

STREAMS: BMET

TIME: 2 HOURS

DAY/DATE: MONDAY 01/02/2021

11.30 A.M – 1.30 P.M.

INSTRUCTIONS

- *Answer question **one** and **anyother two** questions.*

Question 1 (Compulsory) (30 marks)

- Explain any 5 limitations of conventional drug delivery systems. (5 marks)
- Describe drug delivery mechanisms employed in Procardia XL (nifedipine).(5 marks)
- Outline 5 properties of an “ideal” drug delivery system. (5 marks)
- Highlight 4 characteristics that make adenovirus a suitable viral vector. (4 Marks)
- Describe the disadvantages of transdermal drug delivery over other routes of drug delivery. (6 Marks)
- Outline 5 formulation of microparticulates for intraocular drug delivery. (5 Marks)

Question 2 (20 marks)

- Discuss diffusion-controlled drug release mechanisms in drug delivery and targeting. (10 marks)
- Describe how bioadhesive gels enhance the vaginal absorption of drugs and discuss various bioadhesive polymers under investigation. (10 marks)

Question 3 (20 marks)

- Describe the various approaches to cancer gene therapy presently being investigated. (10 Marks)
- Explain 5 applications of macrodevices in drug delivery and targeting. (10 marks)

Question 4 (20 marks)

- a) Using an appropriate diagram, outline the principles of iontophoresis. (10 marks)
 - b) Discuss dissolution-controlled drug release mechanisms in drug delivery and targeting. (10 marks)
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