THE OPEN UNIVERSITY OF SRI LANKA
EXAMINATION DIVISION

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THE OPEN UNIVERSITY OF SRI LANKA
FACULTY OF HEALTH SCIENCES
DEPARTMENT OF PHARMACY
THE ACADEMIC YEAR 2024/2025 – SEMESTER I

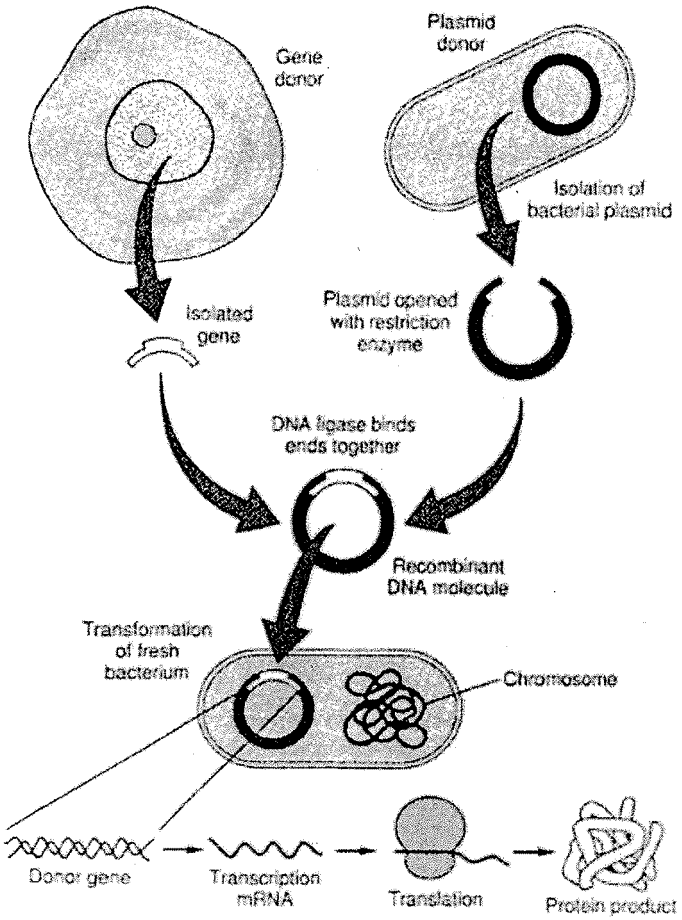
BACHELOR OF PHARMACY HONOURS
FMU6300 – PHARMACEUTICAL BIOTECHNOLOGY & GENETIC ENGINEERING
LEVEL 6
FINAL EXAMINATION
DURATION: THREE (03) HOURS

DATE: 15TH MAY 2025 TIME: 1.30 P.M. - 04.30 P.M.

Index Number: .....

Part B- Short Answer Questions (20 Marks)

01. You could consider the following diagram to answer the questions given below:



1.1 Give a suitable "term" to describe the above diagram. (02 marks)

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1.2 How is "DNA insert" named in this diagram? (02 marks)

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1.3 Name three (03) molecular techniques involved in the above process. (06 marks)

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02.

2.1 What is meant by the term "Multiple Cloning Site"? (05 marks)

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2.2 Name the process for the introduction of a recombinant DNA molecule into a host cell for multiplication (05 marks)

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Part C- Structured Essay Questions (60 Marks)

Answer all questions

01.

1.1 What is meant by the term "Genetic Variation"? (02 marks)

1.2 Give two (02) different situations of genetic variations in human. (04 marks)

1.3 Briefly explain the major steps of the Southern blotting technique used for one of the above scenarios mentioned in 1.2. (09 marks)

02.

2.1 What is meant by "Insertional Inactivation"? (02 marks)

2.2 Give two (02) different methods used to screen recombinant plasmids. (04 marks)

2.3 Briefly illustrate one of the methods mentioned in 2.2. (09 marks)

03.

3.1 Define the term "transgenic plants". (02 marks)

3.2 Briefly explain two (02) different methods used to generate transgenic animals. (04 marks)

3.3 Write a brief description of the process of monoclonal antibody production. (09 marks)

04.

4.1 Give four (04) applications of fermentation technology in the pharmaceutical industry. (02 marks)

4.2 Outline four (04) factors to be considered when designing a fermenter. (04 marks)

4.3 Using a labelled diagram, illustrate the process of synthesis of a pharmaceutical product using the fermentation technology (09 marks)