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24 MAR 2023

THE OPEN UNIVERSITY OF SRI LANKA
FACULTY OF HEALTH SCIENCES
DEPARTMENT OF PHARMACY
THE ACADEMIC YEAR 2022/ 2023 – SEMESTER I

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

DATE: 24.03.2023 TIME: 9.30 A.M.-12.30 P.M.

INDEX NO : .....

Index Number:.....

Part B- Short Answer Questions (20 Marks)

01.

1.1 What is meant the term "rDNA technology"? (04 marks)

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1.2 Give four (04) scopes of pharmaceutical biotechnology. (08 marks)

I).....

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II).....

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III).....

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IV).....

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02.

2.1 What is meant by "cDNA cloning"? (04 marks)

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2.2 Give two (02) methods to generate DNA fragments for cloning. (04 marks)

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Index Number:.....

Part C- Structured Essay Questions (60 Marks)

01.

1.1 Briefly explain three (03) principal methods used for the creation of transgenic animals. (06 marks)

1.2 Illustrate the steps in making a transgenic mouse using pronuclear DNA microinjection. (04 marks)

1.3 Describe the applications of transgenic animals in the medical and other related fields. (05 marks)

02.

2.1 Name two (02) methods used in plant cell culture. (06 marks)

2.2 Explain one (01) of the methods mentioned in 2.1. (04 marks)

2.3 Discuss practical issues usually encountered in plant/animal tissue culture. (05 marks)

03.

3.1 Identify four (04) important areas that could be applied to produce pharmaceutical compounds. (04 marks)

3.2 Pharmaceutical biotechnology is an important area for medical biotech industries. Discuss the importance using two examples. (06 marks)

3.3 Explain why Polymerase Chain Reaction (PCR) is commonly used in disease diagnostics. (05 marks)

04.

4.1 Briefly explain three (03) factors that alter three dimensional structure of an enzyme. (06 marks)

4.2 Discuss how does the shape of an enzyme affect the catalytic activity of the enzyme. (04 marks)

4.3 Briefly describe the advantages of immobilized enzymes in the pharmaceutical industry. (05 marks)