

BACHELOR OF PHARMACY HONOURS
BPU4141- PHARMACEUTICAL BIOTECHNOLOGY AND GENETIC
ENGINEERING
FINAL EXAMINATION
DURATION: TWO HOURS

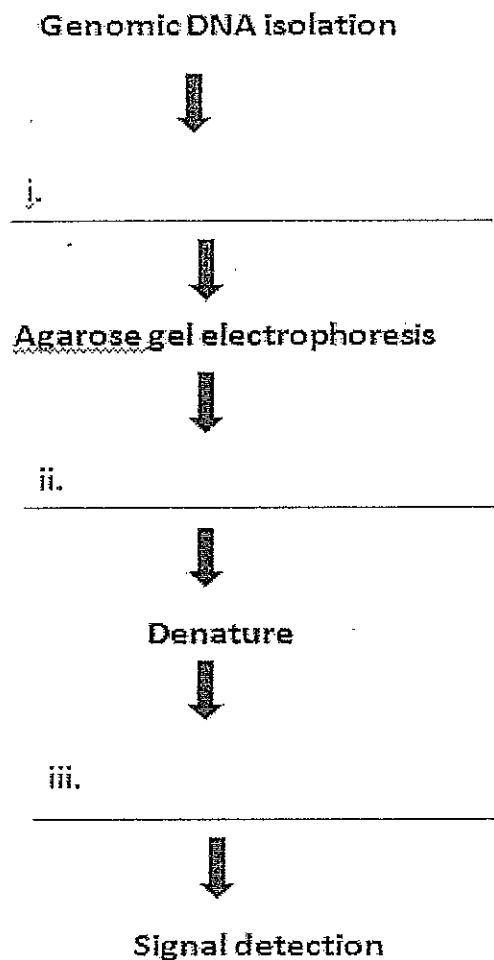
DATE: 08th MARCH 2019

TIME: 09.30 AM –11.30 AM

Part B (30 marks)

01.

1.1 Consider the following flow chart of southern blotting technique, Fill the missing steps in the diagram. (06 marks)



- i.
- ii.
- iii.

1.2 Name two (02) applications of the above technique.

(04 marks)

- i.
- ii.

1.3 Using a diagram indicate essential elements of a cloning vector. (05 marks)

02.

2.1 Name six (06) different types of sequences deposited in nucleotide databases. (06 marks)

- i.....
- ii.....
- iii.....
- iv.....
- v.....
- vi.....

2.2 State five (05) factors affecting the enzyme activity. (05 marks)

- i.....
- ii.....
- iii.....
- iv.....
- v.....

2.3 State four (04) modes of antibiotic action that are used in antibiotic classification.

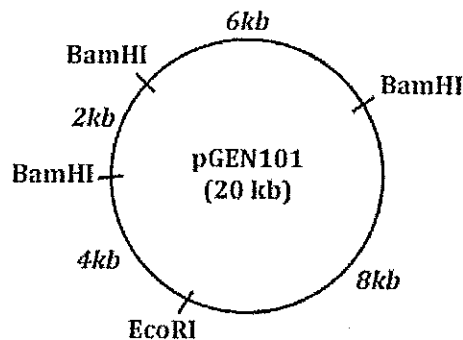
(04 marks)

- i.....
- ii.....
- iii.....
- iv.....

Part C (40 marks)

01. Answer All parts.

- 1.1 Calculate the approximate length of DNA fragments produced when genomic DNA is digested with a restriction enzyme that recognizes a 4-base pair sequence. (05 marks)
- 1.2 What is meant by a probe in molecular biology? (04 marks)
- 1.3 Name four (04) types of cloning vectors used in molecular cloning and their respective fragment sizes. (06 marks)
- 1.4 Consider the following plasmid map. Give the number of restriction fragments along with their associated lengths that would result from digesting the plasmid with the restriction enzymes *EcoRI*, *BamHI*, and a combination of *EcoRI* + *BamHI* (double digestion with both *EcoRI* + *BamHI*). (05 marks)



02. Answer All parts.

- 2.1 Briefly explain the steps of cryopreservation of cell cultures? (03 marks)
- 2.2 What are the major steps of "Protein to Gene approach" in discovering new drugs? (07 marks)
- 2.3 With an appropriate example, briefly explain why blood grouping is important in blood transfusion. (05 marks)
- 2.4 State five (05) uses and application of papain. (05 marks)

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