UNIVERSITY OF JOHANNESBURG

FACULTY OF SCIENCE

DEPARTMENT OF BIOTECHNOLOGY (DFC)

MODULE: BTN2BBP BIOPROCESSING (NATIONAL DIPLOMA BIOTECHNOLOGY*)*

DECEMBER SUPPLEMENTARY EXAMINATION

DATE: 3 DECEMBER 2014 **SESSION: 8.30 – 11.30**

EXAMINER **Dr.Sudharshan Sekar**
EXTERNAL MODERATOR **Dr P Stegmann**
DURATION 3 HOURS **MARKS 190**

SURNAME AND INITIALS:
_____

STUDENT NUMBER:
_____

CONTACT NUMBER:
_____

NUMBER OF PAGES: PAGES,

INSTRUCTIONS:

1 ANSWER ALL QUESTIONS
2 MAKE SURE THAT YOUR NAME OR STUDENT NUMBER IS CLEARLY WRITTEN ON YOUR **EXAMINATION ANSWER SCRIPT** AND **QUESTION PAPER**
3 HAND IN YOUR **EXAMINATION ANSWER SCRIPT** AS WELL AS YOUR **QUESTION PAPER**

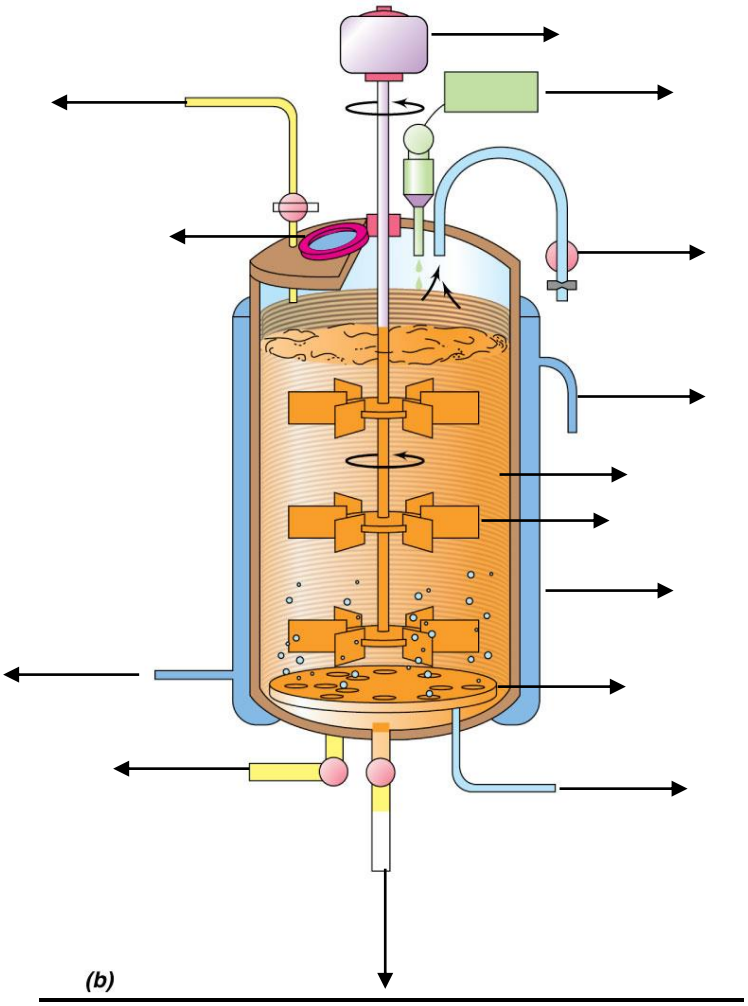
REQUIREMENTS:

1 EXAMINATION ANSWER SCRIPT

QUESTION 1 (Answer on Question paper)

Label the diagram below?

[10]



QUESTION 2

Explain how lysine production can be optimized with the use of a Homoserine-requiring Auxotroph mutant as well a Regulatory mutant **[20]**

QUESTION 3

The yeast used in the brewing of beer does not possess the necessary Enzymes to utilize the main carbohydrate and protein nutrients supplied for the Process. Describe this problem and how it is overcome in detail?

[20]

QUESTION 4

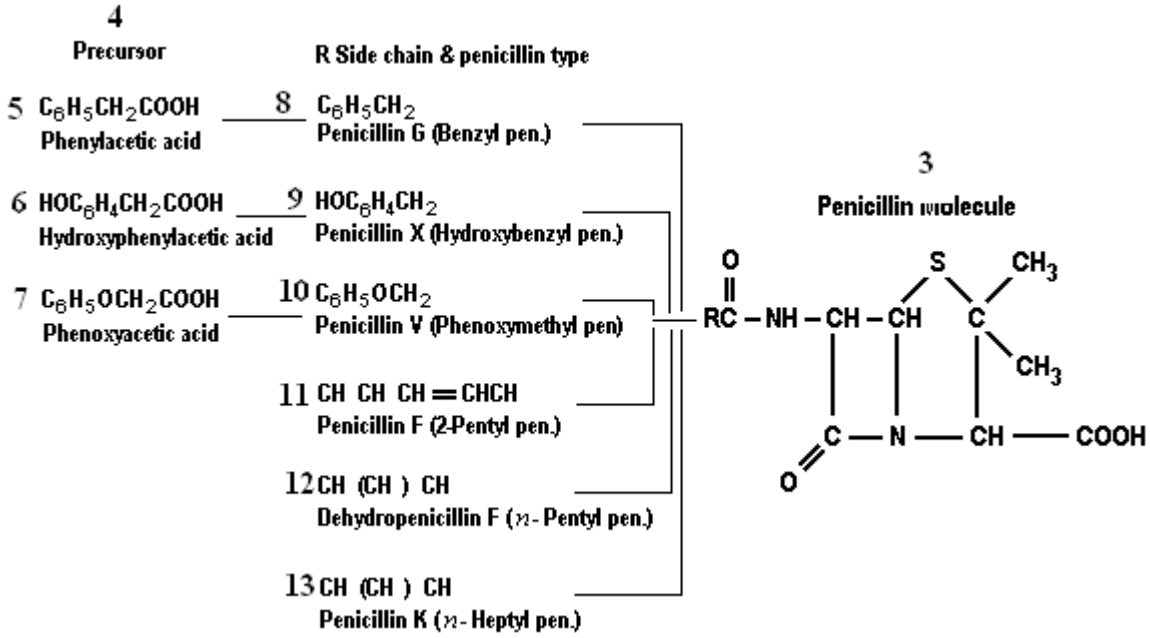
Describe the role of microorganisms in the production of any one of the following food products: Yoghurt OR Pickles?

[10]

QUESTION 5

With the aid of a diagram, explain how precursors may be used to manipulate

penicilin production.?



[10]

QUESTION 6

Explain Hydroxylation and its role in the production of valuable pharmaceutic products.

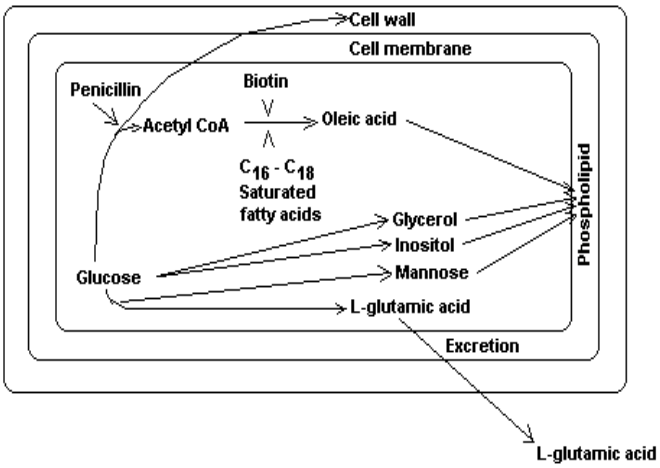
Give appropriate examples?

[20]

QUESTION 7

With the aid of a diagram, explain the production of L-glutamic acid in wild strain bacteria?

[20]



QUESTION 8

With the aid of examples, explain how dehydrogenation can be used to

Achieve microbial biotransformation?

[20]

QUESTION 9

Explain Enzyme Immobilization methods and its types in detail?

[30]

QUESTION 10

Explain wastewater treatment processes in detail?

[30]

[190]