Topic 11. Glucose biosynthesis - gluconeogenesis.

Theoretical questions:

1. Gluconeogenesis, its location. Summary of pathways.
2. Reactions of Glycolysis bypassed in Gluconeogenesis.
3. The Cori Cycle and Glucose Alanine Cycle, their localization in the cell and biological role.
4. Metabolic and hormonal regulation of gluconeogenesis.

Study Questions and Tasks

1. **Gluconeogenesis**

1.1.Definition_____

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1.2. Biochemical role and localization:

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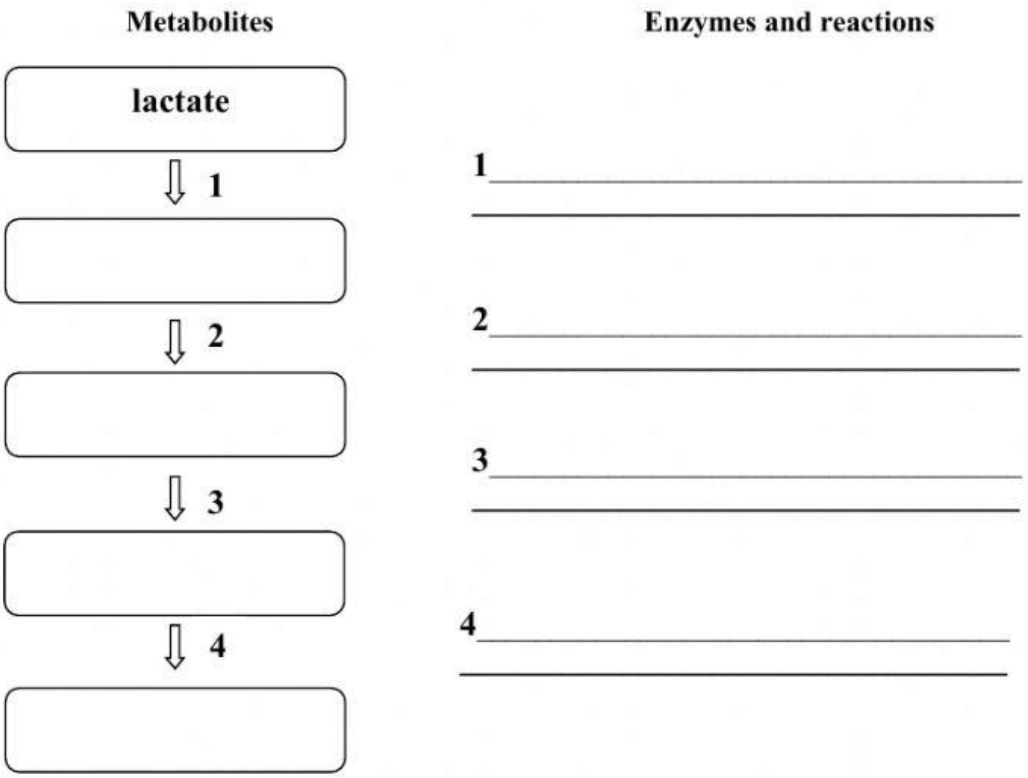
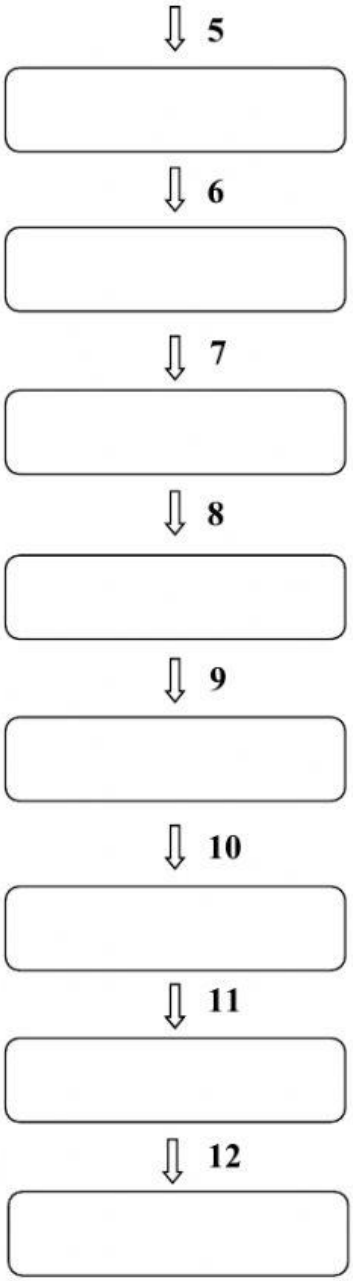
1.3. Scheme





5_____

6_____

7_____

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10_____

11_____

12_____

2. Write down the reactions of gluconeogenesis from lactate.

1.

2.

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12.

2.1. Write down the order of metabolites for Gluconeogenesis from:
alanine

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_____
_____

aspartate

_____
_____
_____
_____

glutamate

_____
_____
_____

glycerol

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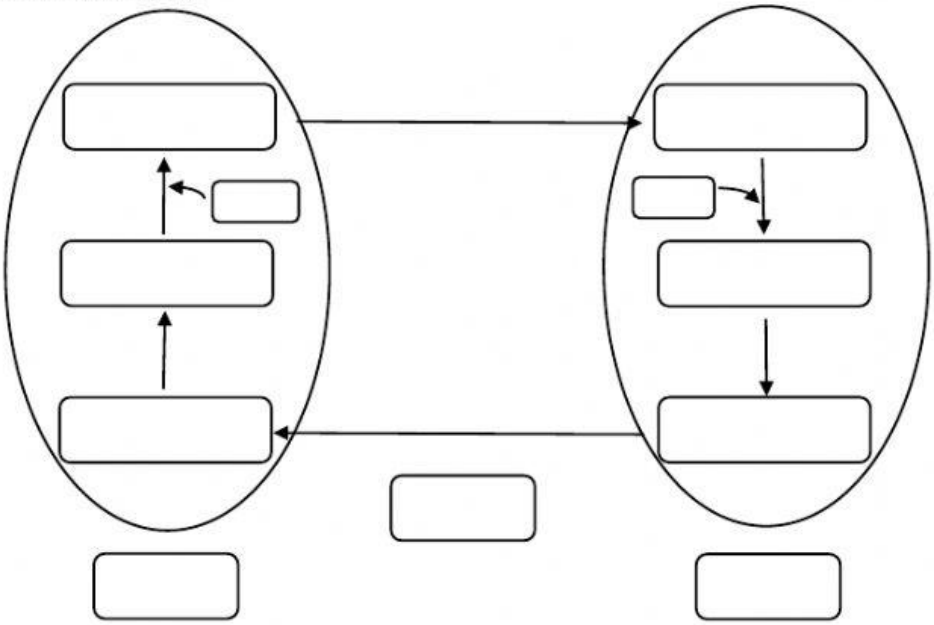
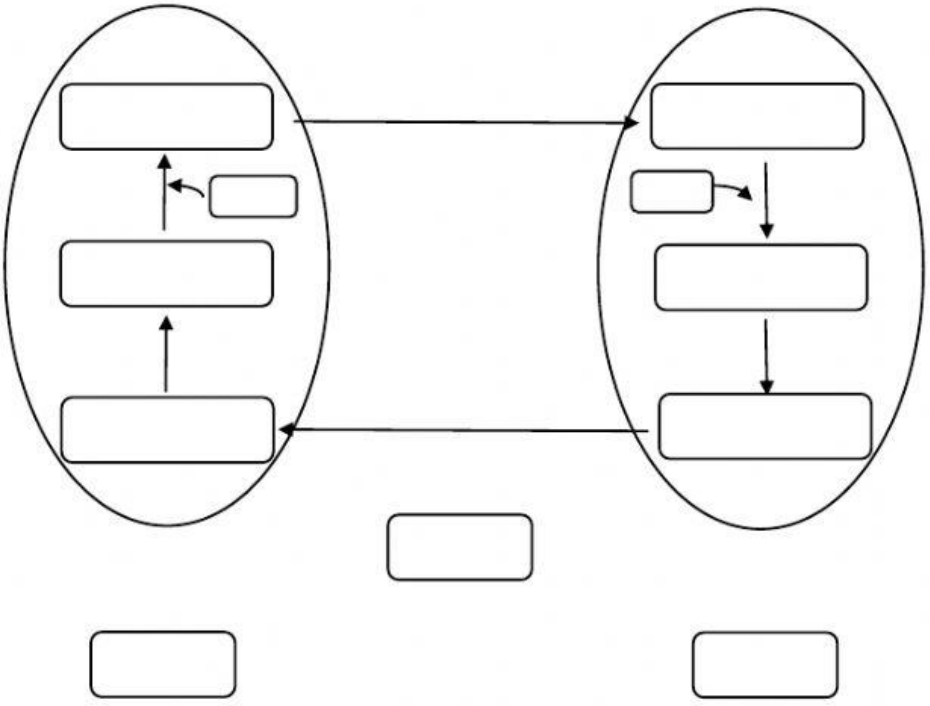
3. Draw schemes for

3.1. The Cori Cycle



3.2. Glucose - Alanine Cycle



1. **Metabolic and hormonal regulation of gluconeogenesis.**

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Sites for additional information:

https://www.wiley.com/college/boyer/0470003790/animations/animations.htm
https://www.wpunj.edu/sec/vsec/science_courses/biochem/

Text-books:

1. Biochemistry 5th Edition Ch.11, pp.125-136, Ch.23, pp.307-320.
2. Prasad textbook of biochemistry OCR. Topic 10. pp. 172-211.