CHEM-E3100 Biochemistry. Exam 24.6.2016

Answer to all questions. Write the answers to questions 1 and 2 (and 5 if needed) on a separate paper. Return all papers.

Question 1) Describe glycolysis (according to reading instructions given before the exam).

Question 2) Describe the overall structural organization, the main events and the role of oxidative phosphorylation (electron transfer chain) in cell metabolism (max one page answer).

Question 3) Link each name to corresponding structure by writing on the line the letter (A,B,C,D,E or F)code of the structure that corresponds to the name of the molecule.



Question 4) Give short answers to the subquestions A-E (the space below is enough).

A) What cell molecules can be derived (produced) from the molecules in the pentose phosphate pathway?

B) Describe shortly the principle for initiation and elongation of fatty acid chain in its synthesis (no modification of chemical groups is needed to describe).

C) What reaction is the bridge between glycolysis and citric acid cycle, and how citric acid cycle starts?

D) Pyrimidine ring is an important component in nucleotides. Carbamoyl phosphate and one amino acid are the compounds used to form the pyrimidine ring. What is this amino acid? And what are the molecules used to form carbamoyl phosphate?

E) What is the role of Calvin cycle in cell metabolism?

Question 5) Answer to question 5A or 5B. The people whose work is as a question are not allowed to answer to the "own" enzyme question.

A) Describe the active site events and reaction mechanism of pyruvate kinase. OR

B) Describe the active site events and reaction mechanism of hexokinase.