

Mid-Term Exam in Biochemistry

Student Name:.....	Roll No.:.....
Grade: <u>30</u>	Model Answer

QUESTION ONE: (10X1=10 marks, 10 min)

Write the scientific term for each of the following descriptions:

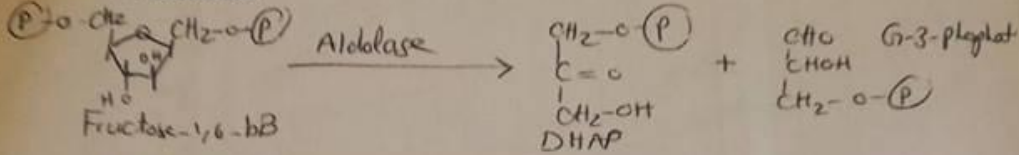
Description	Terms
1. Enzymes that catalyze bond formation between C and O, N, & S coupled with hydrolysis of ATP	ligases
2. A special pocket of amino acid side chains that create a three-dimensional surface complementary to the substrate.	Active site
3. The maximum rate achieved by an enzyme catalyzed reaction.	V _{max}
4. Multiple forms of enzymes that catalyze the same reaction and have slight variations in the amino acid sequences.	isozymes
5. It is a homopolymer of α-glucose that stored in plants.	Starch
6. It is a term that compare between the ATP yield from glycolysis under anaerobic and aerobic conditions.	Pasteur Effect
7. An Enzyme in RBCs which bypasses the first site in glycolysis for ATP generation.	BPG mutase
8. A glycolytic enzyme which inhibited by arsenate.	Glyc-3-PDH
9. A metabolic disorder of galactose metabolism resulted from the deficiency of galactokinase	Non-classical Galactosemia
10. The pathway used for transport of oxaloacetate to the cytosol.	Malate shuttle

QUESTION TWO:

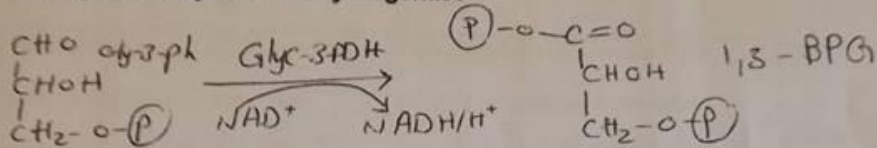
(5×2=10 marks, 15 min)

Write full chemical equations catalyzed by the following enzymes:

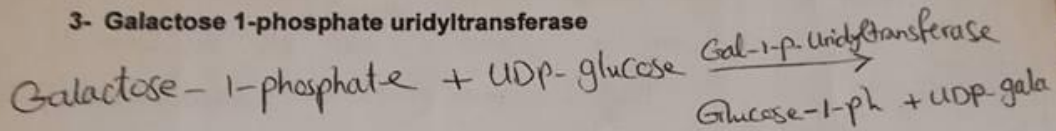
1- Aldolase A



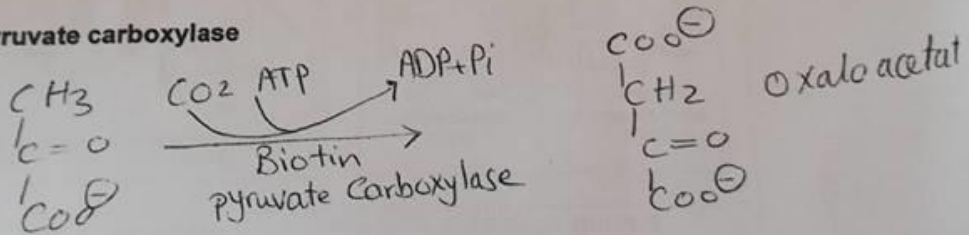
2- Glyceraldehyde 3-P dehydrogenase



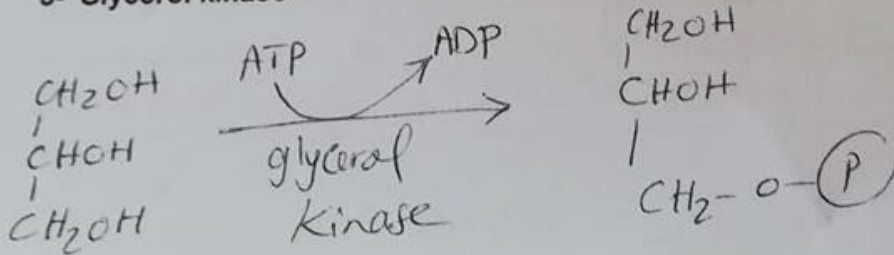
3- Galactose 1-phosphate uridylyltransferase



4- Pyruvate carboxylase

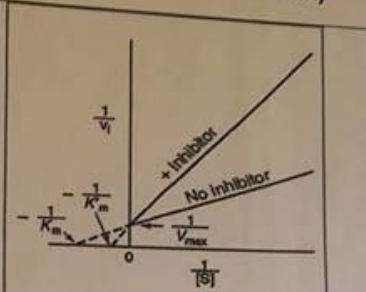
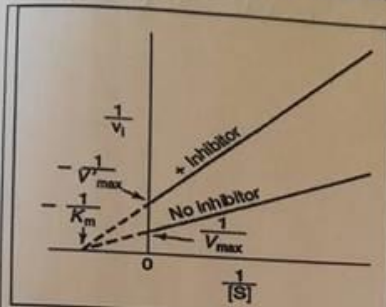


5- Glycerol kinase



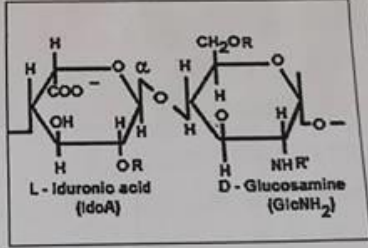
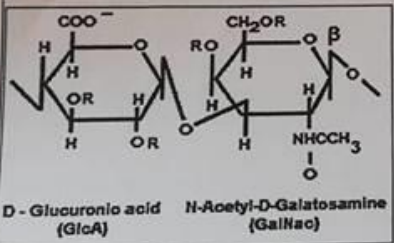
QUESTION THREE:

Complete the following table as indicated: (10 Marks, 10 min)



Type of inhibitor is Non-Competitive
 Effect of inhibitor on V_{max} and K_m ... V_{max} is constant & K_m is constant
 Examples of this type of inhibitors... Lead & insecticides

Type of inhibitor is Competitive
 Effect of the inhibitor on V_{max} and K_m ... V_{max} not changed & $\uparrow K_m$
 Examples of this type of inhibitors... Allopurinol



The name of the above structure is Chondroitin sulfate
 The function of this structure is found in connective tissue & cartilage

The name of the above structure is Heparin
 The function of this structure is natural anticoagulant + inhibit anti-thrombin III

GOOD LUCK