

Name: \_\_\_\_\_

Date: \_\_\_\_\_

Time: \_\_\_\_\_

**1** Draw structural formulas.

Acetoacetic acid

Lactone derived from 4-hydroxypentanoic acid

Acetylcholine

Ethanolamine

Butyl sulfate

Glyceric acid

**2** Write reaction using structural formulas and give the names of products.

6

Dehydrogenation and deamination of glutamate:

Names of products .....

Conversion of fumarate in citrate cycle:

Names of products .....

4

**3** Draw the structure of valine prevailing at pH 5  
( $pK_{A1} = 2.3$ ;  $pK_{A2} = 9.7$ ).

**4** Draw the structure of adenosine.

1

1

5 Draw the structure of cysteinyl-serine.

6 Draw the structure of  $\alpha$ -D-galacturonic acid.

1

1

7 Draw the structure of phosphatidylethanolamine.

1

8 Consider the reaction  $A \rightarrow P$ . Draw the dependence of reaction velocity  $v$  on time  $t$  for this reaction.



1

9 A strong acid was added to hydrogen carbonate buffer. Express the buffer response by chemical equation.

1

**Exam evaluation:**

	50 - 57	excellent (A)
	47 - 49	outstanding (B)
1. Part: .....	42 - 46	good (C)
2. Part: .....	38 - 41	satisfactory (D)
Total: .....	34 - 37	acceptable (E)
Signatures:	0 - 33	unacceptable (F)