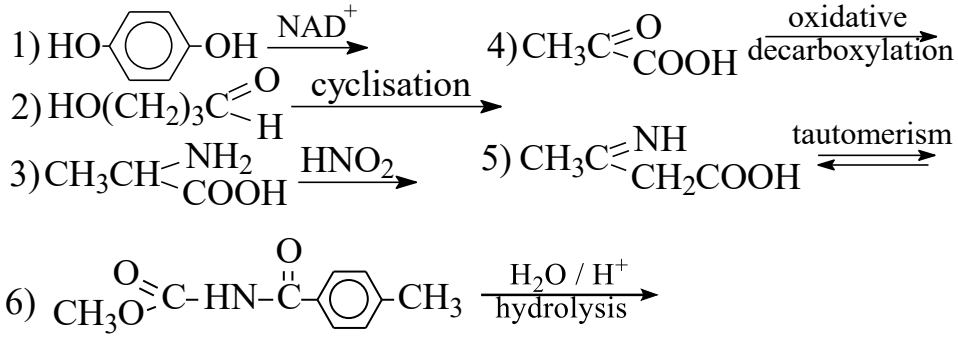
Unit test No. 4

1) **Online unit test** (contains 30 questions randomly chosen from the previous tests).
2) **Paper test** (typical questions).

Sample examination paper

I. *(6 × 1 = 6 points, 2 points – names or class names of the products)*

a) Complete the following reactions:



b) Name the reaction products or state their class names

II. *(1,5 × 4 = 6 points)*

a) Draw the scheme of the formation of α- and β-anomers for D-glucose. Name the tautomers and indicate the glycosidic OH groups.

b) Draw the structural formula of glycogen fragment. Name the monosaccharide fragments, identify and state the type of bonds between them. State the type of this polysaccharides (linear, branched, homo- or heteropolysaccharide).

c) Complete the equations and name the products:

1) D-galactose+ NADPH + H^+ → 2) D-glucosamine + $CH_3C(O)SCoA_{(1\ mol)}$ →

III. *(4 × 1,5 = 6 points)*

a) Draw the structural formula of deoxycytidine-3',5'-diphosphate. Specify N-glycosidic and ester bonds.

b) Write the reaction scheme of the complete hydrolysis of this nucleotide. Indicate the reaction conditions and name the resulting products.

c) Draw the tautomeric forms of the nucleic base formed.

d) For one of these forms write the reaction of deamination in the presence of nitrous acid. Name the reaction product.