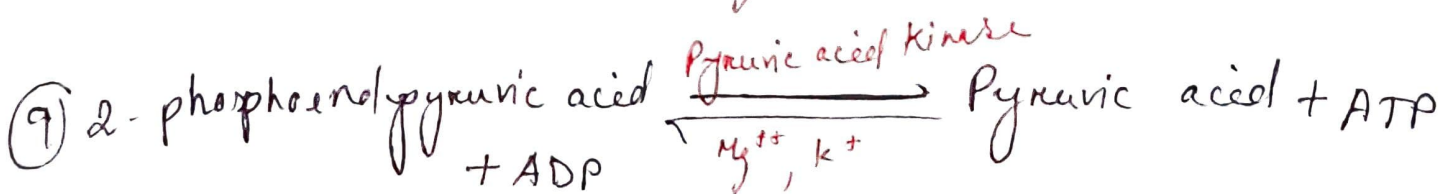
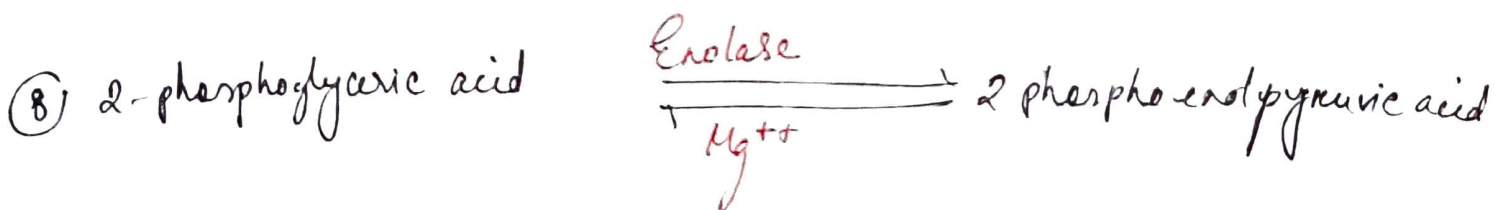
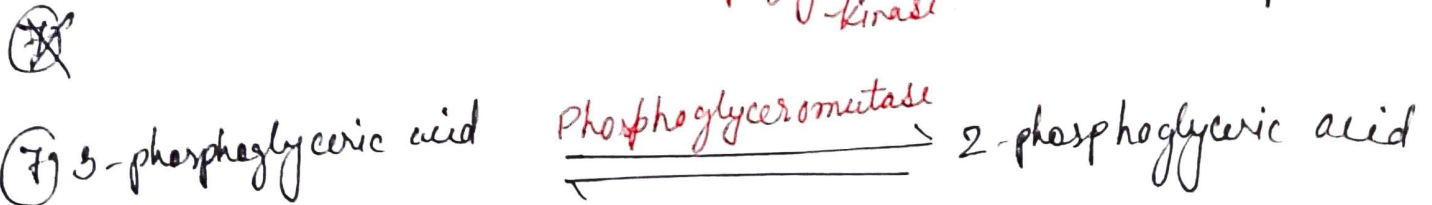
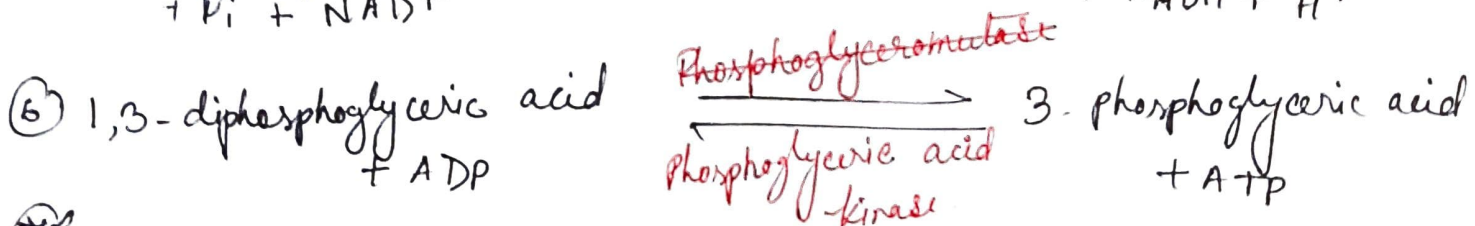
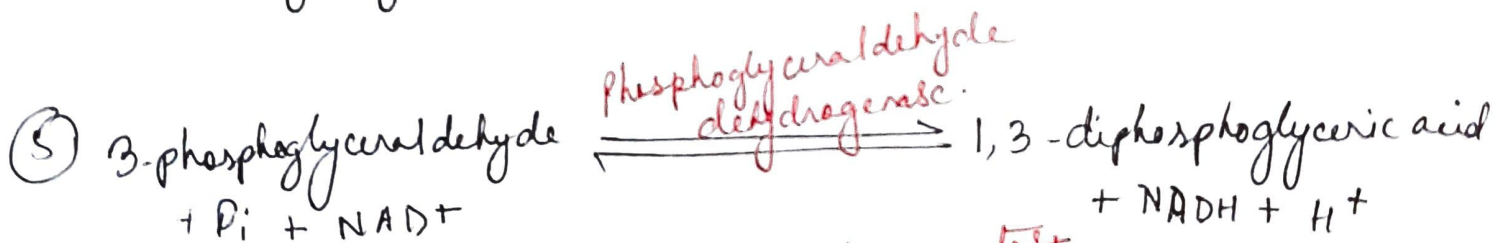
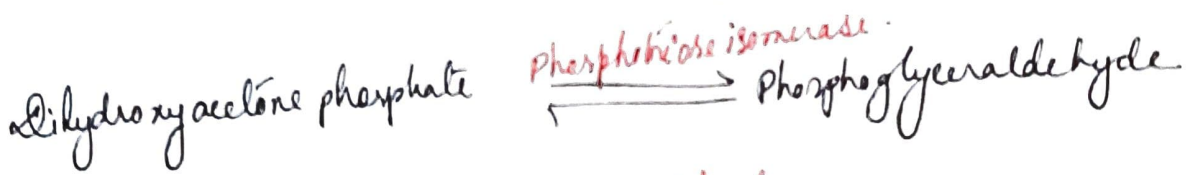
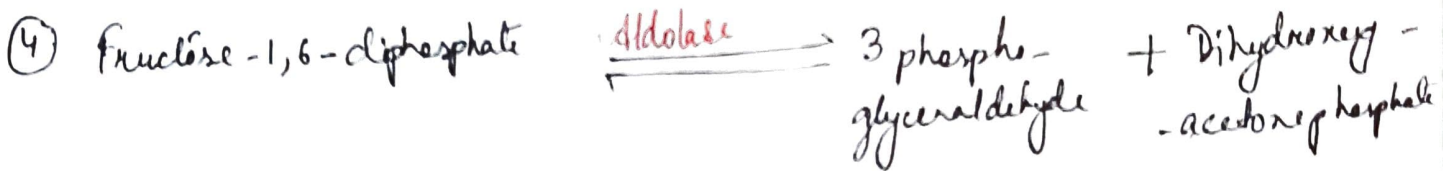
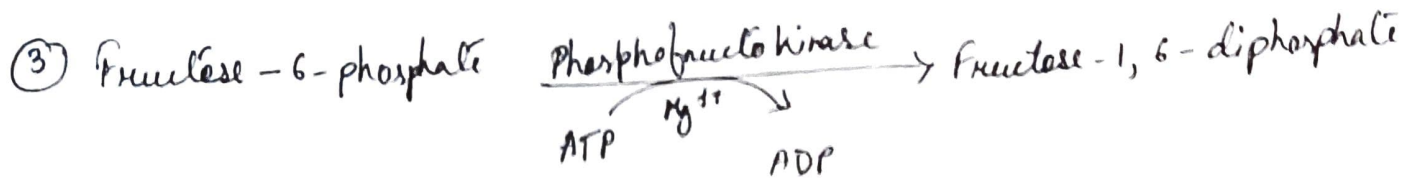
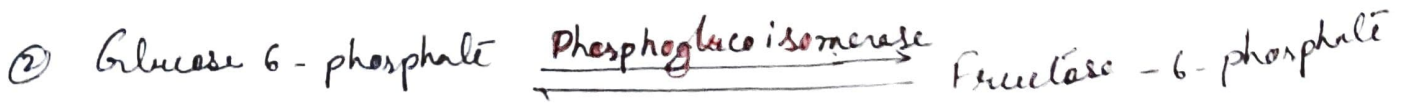
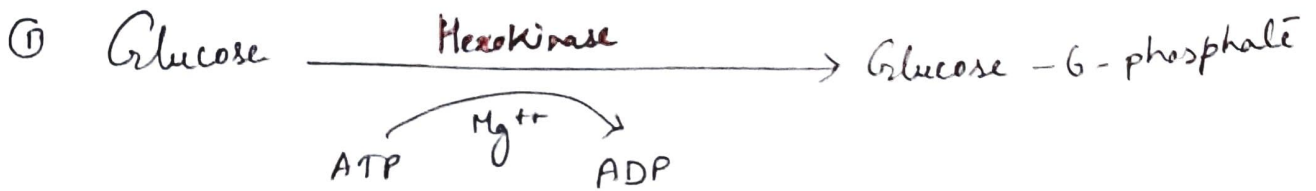


# Glycolysis

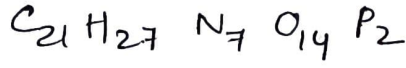


# Krebs Cycle

- ① Pyruvic acid + CoA + NAD<sup>+</sup>  $\longrightarrow$  Acetyl CoA + CO<sub>2</sub> + NADH + H<sup>+</sup>
- ② Oxaloacetic acid + Acetyl CoA  $\xrightleftharpoons{\text{Citric acid Synthetase}}$  Citric acid + HS CoA
- ③ Citric acid  $\xrightleftharpoons[\pm H_2O]{\text{Aconitase}}$  Cis-Aconitic acid  $\xrightleftharpoons[\pm H_2O]{\text{Aconitase}}$  Isocitric acid
- ④ Isocitric acid + NAD  $\xrightleftharpoons{\text{Isocitric acid dehydrogenase}}$  Oxalosuccinic acid + NADH + H<sup>+</sup>
- ⑤ Oxalosuccinic acid  $\xrightleftharpoons[\text{H}_2\text{O}]{\text{Decarboxylase}}$   $\alpha$ -ketoglutaric acid + CO<sub>2</sub>
- ⑥  $\alpha$ -ketoglutaric acid + HS CoA + NAD<sup>+</sup>  $\xrightleftharpoons[\text{Mg}^{++}, \text{TPP, lipoic acid, FAD}]{\text{\alpha-ketoglutaric acid dehydrogenase}}$  Succinyl CoA + NADH<sub>2</sub> + CO<sub>2</sub>
- ⑦ Succinyl CoA + GDP + P<sub>i</sub>  $\xrightleftharpoons{\text{Succinyl thiokinase}}$  Succinic acid + GTP + HS CoA
- ⑧ Succinic acid + FAD  $\xrightleftharpoons{\text{Succinic acid dehydrogenase}}$  Fumaric acid + FADH<sub>2</sub>
- ⑨ Fumaric acid + H<sub>2</sub>O  $\xrightleftharpoons{\text{Fumarate}}$  Malic acid
- ⑩ Malic acid + NAD  $\xrightleftharpoons{\text{Malic acid dehydrogenase}}$  Oxaloacetic acid + NADH<sub>2</sub>

CoA = Coenzyme A

NAD<sup>+</sup> = Nicotinamide Adenine Dinucleotide.



NADH = Nicotinamide Adenine Dinucleotide + Hydrogen (H)

Acetyl CoA = Acetyl Co-enzyme A.

HSCoA =

GDP = Guanine diphosphate, GTP = Guanine triphosphate

P<sub>i</sub> = Inorganic Phosphate

FAD = Flavin Adenine dinucleotide

ATP = Adenosine Triphosphate

ADP = Adenosine Diphosphate