**Lesson 5 – Citric Acid Cycle**

**1. Stages of catabolism**

What is a metabolism? What is a anabolism? What is a catabolism?

What are the stages of catabolism? Briefly describe what happens at each stage.

**2. ATP**

What is ATP?

Draw an ATP molecule and explain why it is used as an energy store?

**3. Citric acid cycle**

What is the citric acid cycle?

What is the substrate of the citric acid cycle?

What substances break down to form acetyl-CoA?

Where does the citric acid cycle take place?

What is the function of the citric acid cycle?

Fill in the table

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Enzyme | Class of enzyme | Cofactors | Substrates | Products | What happens in reaction | Regulation |
| Pyruvate dehydrogenase complex |  |  |  |  |  |  |
| Citrate synthase |  |  |  |  |  |  |
| Aconitase |  |  |  |  |  |  |
| Isocitrate dehydrogenase |  |  |  |  |  |  |
| α-Ketoglutarate  dehydrogenase complex |  |  |  |  |  |  |
| Succinyl-CoA synthetase |  |  |  |  |  |  |
| Succinate dehydrogenase |  |  |  |  |  |  |
| Fumarase |  |  |  |  |  |  |
| Malate dehydrogenase |  |  |  |  |  |  |

How many ATP are generated by the citric acid cycle?

How many NADH are generated by the citric acid cycle?

How many FADH2 are generated by the citric acid cycle?