

CHAP : 25

Metabolism



Metabolism = \_\_\_\_\_

- A.
- B.

(1)

Energy Production

- 1) Oxidation = \_\_\_\_\_
- 2) Reduction = \_\_\_\_\_

B. Coenzymes

- 1.
- 2.

These coenzymes are found \_\_\_\_\_

(2)

Energy Production

A. Phosphorylation = \_\_\_\_\_

- 1) substrate level = \_\_\_\_\_
- 2) Oxidative phosphorylation = \_\_\_\_\_

(3)

(4)

Carbohydrate Metabolism

A. Fate of carbohydrates

- 1.
- 2.
- 3.
- 4.
- 5.

(5)

Carbo Catabolism: Glycolysis

- 1. occurs \_\_\_\_\_
- 2. glucose  $\rightarrow$  \_\_\_\_\_
- 3. little vs. lot ATP?
- 4. little vs. lot NADH<sub>2</sub>?
- 5. with or without O<sub>2</sub>?

①

All chemical reactions in the body.

a) Catabolism - breakdown large molecules

b) Anabolism - require ENERGY = ATP

④

1. ATP formation
2. Glycogenesis
3. Amino Acids
4. Lipogenesis
5. Urine

②

A. 1) loose electrons

2) gain electrons

B) 1) NAD+

2) FAD

float in cytoplasm

⑤

1. Cytosol
2. pyruvate
3. Little
4. Little
5. without

③

A) adding phosphate

1) produces a little ATP → glycolysis & Kreb's cycle.

2) uses oxygen to make lots ATP → ETS.

Carbohydrate Catabolism: 6  
Formation of Acetyl/Krebs Cycle

1. occurs \_\_\_\_\_.
2. pyruvate/acetyl → \_\_\_\_\_
3. little vs lot  $NADH_2$  → \_\_\_\_\_
4. little vs lot ATP? \_\_\_\_\_
5. Only place make → \_\_\_\_\_

Carbohydrate Catabolism: 7  
Electron Transport System

1. occurs in \_\_\_\_\_
2. makes \_\_\_\_\_
3. \_\_\_\_\_ is used?
4. \_\_\_\_\_ is produced?
5. little vs lot ATP?
6. NAD little vs lot?

Lipid Metabolism = 8  
Fate of Lipids

- 1)
- 2)
- 3)
- 4)
- 5)
- 6)
- 7)
- 8)

Triglyceride Storage 9

- a) most = \_\_\_\_\_
- b) least = \_\_\_\_\_

10

p. 3-6

Lipid Catabolism =

- a) \_\_\_\_\_
- b) Fatty Acids break down by \_\_\_\_\_

11

Protein Metabolism  
Fate of Proteins

- 1)
- 2)
- 3)
- 4)
- 5)

- 1) mitochondria
- 2) CO<sub>2</sub>
- 3) Lot
- 4) LITTLE
- 5) FADH<sub>2</sub>

(6)

- 1. Mitochondria
- 2. FADH<sub>2</sub>
- 3. O<sub>2</sub>
- 4. H<sub>2</sub>O
- 5. Lot
- 6. LOT

(7)

- 1) ATP Production
- 2) stored in adipose
- 3) structural components:
- 4) cell membrane
- 5) HDL & LDL (Lipoproteins)
- 6) myelin sheath
- 7) bile salts
- 8) steroids

(8)

- a) hypodermis
- b) behind eyes

(9)

(10)

- a) Lipolysis
- b) Beta oxidation (Ketone bodies)

p. 4-6

(11)

- 1) muscles (actin/myosin)
- 2) enzymes / hormones
- 3) antibodies
- 4) collagen, elastic
- 5) hair & nails

Protein Catabolism  
Amino Acids breakdown  
by \_\_\_\_\_.

Protein Anabolism  
What is part of it?  
a)  
b)

- 1) Minerals are \_\_\_\_\_.
- 2) Vitamins are \_\_\_\_\_,
- 3) also or can be \_\_\_\_\_.

Deamination

p 6-6

~~10~~

12

~~11~~

a) transcription

~~11~~

13

b) translation

~~11~~

1) inorganic

~~12~~

14

2) vitamins } coenzyme

3) coenzyme } vitamin

~~11~~