Homework assignment #2 (20 points): This is an OPTIONAL assignment. This means that if you decide to turn it in, these 20 points will factor into your grade regardless of your score. If you don't turn this in by Friday, 10/12/01 before class these points will not be factored into your grade. To complete the assignment print it out and turn in a hard copy.

Regardless of your choice I think this is a good method of review for the exam. I suggest you study for the test and use this as a sample test -- take it by yourself!!! After, it may be helpful to sit down with a partner and discuss the answers. However, simply copying the answers from someone without any contribution to the discussion will only hurt you -- sure, you'll get a good grade but it won't help you much as far as learning the material and performing well in the exam. And besides, that it is plagiarism.

Name:

Multiple choice (1 point each)

1. Which of the following is not a component of spongy bone?

   a. trabeculae

   b. lamellae

   c. osteons

   d. collagen fibers

   e. ground substance

2. An osteon has:

   a. trabeculae

   b. a perforating (Volkman's) canal that carries blood vessels that supply needs of single osteon

   c. concentric lamellae

   d. woven bone

   e. all of the above

3. Where within the epiphyseal plate are the dividing cartilage cells located?

a. in the medullary cavity

b. nearest to the diaphysis

c. farthest from the diaphysis

d. in the articular cartilages

e. within the osteons

4. During endochondral ossification:

a. a cartilage plate is mineralized and directly turned to bone

b. a fibrous connective tissue membrane is degraded and replaced by mineralized osteoid

c. osteoclasts that have entered a cavity within cartilage matrix differentiate into osteoblasts and deposit osteoid

d. osteoblasts that have entered a cavity within cartilage matrix deposit osteoid on degrading cartilage scaffolding

e. the ossification process involves only appositional growth of bone

5. The events occurring at the epiphyseal plate during bone growth:

a. are an example of interstitial cartilage growth

b. are an example of appositional cartilage growth

c. occur only in the embryo

d. occur throughout adulthood

e. cause increase in epiphyseal plate width over time

6. Bone remodeling throughout adulthood:

a. is controlled by calcium blood levels

b. always results in greater rates of bone deposit that bone resorption

c. always results in greater rates of bone resorption than deposit

d. is controlled by mechanical stresses placed on skeleton

e. a and d are true

7. The only type of bone where a medullary cavity is found is:

a. an irregular bone
b. a short bone
c. a long bone
d. a flat bone
e. all of above have medullary cavities

8. Which of the following is not an event of glycolysis:

a. decarboxylation
b. oxidative phosphorylation
c. oxidation
d. substrate-level phosphorylation
e. both a and b

9. ATP production in the electron transport chain:

a. occurs in the cytosol
b. is a form of substrate level phosphorylation
c. results from dissipation of a Na^+ gradient across the cell membrane
d. requires oxygen
e. b and d are true

10. The majority of NADH + H^+ that participates in the electron transport chain is produced during:

a. activation phase of glycolysis
b. oxidation phase of glycolysis
c. entry step into the Krebs cycle
d. Krebs cycle
e. oxidative phosphorylation step of glucose metabolism

11. Fatty acid components of triglycerides enter the "trunk" of carbohydrate metabolism:

a. at the level of the splitting stage of glycolysis

b. at the oxidation stage of glycolysis

c. as acetyl CoA

d. at the level of the Krebs cycle

e. c and d are true

12. Which of the following processes is not stimulated by insulin?

a. glycogen synthesis in muscle

b. glycogen synthesis in liver

c. triglyceride breakdown in adipose tissue

d. decreased glucose uptake into liver

e. all of above are processes stimulated by insulin

13. Which of the following molecules yield the highest amount of energy when metabolized?

a. fats

b. vitamins

c. glycogen

d. proteins

e. glucose

For the next **three** questions determine the influence of the first parameter on the second one. SELECT:

A if the first parameter causes an increase in the second parameter.

B if the first parameter causes a decrease in the second parameter.

C if the first parameter does not change the second parameter.

14. Increased blood concentration of calcitonin on osteoclast activity.

15. Falling blood calcium levels on blood parathyroid hormone concentration.

16. Exercise on bone resorption rate.

Short answer: answer the question briefly yet completely (4 points).

17. Explain why the epiphyseal plate does not change in thickness through early childhood.