

Name Key

test # \_\_\_\_\_

**MULTIPLE CHOICE. Choose the one alternative that best completes the statement or answers the question. (5 pts per question, 20 pts, there is one extra credit question)**

- 1) Choose the one incorrect statement. 1) B
- A) Enzymes are catalysts which are mostly made of protein.
  - B) An enzyme substrate is the molecule which inhibits the action of the enzyme.
  - C) Enzyme induced fit means that the substrate fits into the enzyme to form an enzyme / substrate complex. If the substrate does not fit into the enzyme, the catalysis does not happen.
  - D) A catalyst is a substance which makes the reaction go to product easier and faster than without a catalyst. A catalyst is not consumed during the reaction.
- 2) Choose the one incorrect statement 2) C
- A) Two types of nucleic acids are DNA and RNA.
  - B) Nucleic acids are natural polymers with sugar and phosphate backbone with heterocyclic bases attached to the backbone.
  - C) RNA consists of a double helix while DNA consists of a single helix.
  - D) All amino acids are coded by a 3 nucleotide RNA sequence.
- 3) Choose the one best statement. 3) D
- A) Aspirin, ibuprophen and naproxen are all NSAIDS.
  - B) NSAIDS work by blocking the cox enzyme.
  - C) NSAIDS work by blocking prostaglandins.
  - D) All statements are true.
- 4) Which of the following are not a real side effect of some common pain relievers (analgesics) ? 4) B
- A) Aspirin acts as an antocoagulant so it is recommended to reduce the likelihood of heart attack and stroke.
  - B) Aspirin overdoes cause kidney and liver diseases especially when mixed with alcohol.
  - C) Celebrex causes strokes and heart diseases.
  - D) Aspirin causes stomach bleeding.
- 5) Choose the one incorrect statement. 5) B
- A) An agonist binds to a receptor and has a similar effect. An antagonist inhibits the drug by blocking the receptor.
  - B) Fentanyl, hydrocodone and methadone are found naturally in the poppy seed.
  - C) Opium from the poppy seed is a narcotic. Morphine is a component of opium
  - D) Heroine and Codeine are both derivaties of morphine.

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**MULTIPLE CHOICE.** Choose the one alternative that best completes the statement or answers the question. (5 pts per question, 20 pts, there is one extra credit question)

- 1) The natural chemical which produces pleasure sensations is: 1) C  
 A) norepinephrine  
 B) epinephrine  
 C) serotonin  
 D) norepinephrine agonists
- 2) Choose the one incorrect statement 2) D  
 A) Steroids are a 4 ring base structure which includes testosterone and estrogen.  
 B) stimulants such as cocaine and amphetamines increase alertness, speed mental processes and elevate moods.  
 C) In 1900 the leading causes of death were all related to infections. In 2015 the leading causes of death in the US are heart disease, cancer and similar life style diseases.  
 D) Antibacterial drugs (such as penicillin) work on viruses while antiviral drugs work on bacteria.
- 3) choose the one incorrect statement. 3) C  
 A) Opium made from the poppy is a narcotic. Morphine is a component of opium  
 B) Heroin and codeine are both derivatives of morphine.  
 C) Pentanyl, hydrocodone and methadone are all components of opium.  
 D) Morphine antagonists inhibit morphine by binding to morphine receptors.
- 4) Choose the one incorrect statement 4) C  
 A) aerobic exercise is done with plenty of oxygen and leads to conversion of glycogen to carbon dioxide and water,  
 B) Anabolic steroids increase muscle mass and can enhance athletic performance but are banned in most athletic competition.  
 C) Muscle can be built by eating lots of protein.  
 D) Vitamin D is needed for calcium absorption.

**SHORT ANSWER.** Write the word or phrase that best completes each statement or answers the question.

- 5) Show your calculation of BMI for a person who is 5 foot 9 inches tall and weighs 180 pounds. 5) 26.7

$$BMI = \frac{(705) (\text{body weight (lb)})}{(\text{height (in)})^2}$$

$$5 \times \frac{12''}{ft} = 60 \quad 69 \text{ inches}$$

$$BMI = \frac{(705)(180)}{(69)^2} = \frac{126900}{4761} = 26.790$$