

Name: \_\_\_\_\_

G-number \_\_\_\_\_

**Introductory Biology II, Final Exam  
Summer, 2007**

**Instructions:** There are 78 questions. You may consider three of them as extra credit. Write down the *best* answer for each one. Please make sure that you fill out your scantron correctly. In case of discrepancy, the answer on the scantron will be considered your answer. When you're finished, please hand in *both* the scantron & exam sheet. **Good luck!**

***Material covered by exam I:***

- b \_\_\_ 1) Skin is made up of multiple layers and flattened cells. This (skin) is:  
a) stratified cuboidal connective tissue      b) stratified squamous epithelial tissue  
c) simple columnar epithelial tissue      d) cuboidal columnar epithelial tissue  
e) pseudostratified columnar epithelial tissue
- b \_\_\_ 2) Muscle is what kind of tissue?  
a) connective    b) muscle    c) epithelial    d) nervous    e) stratified
- a \_\_\_ 3) Heat transfer that takes place through direct contact with another object is due to:  
a) conduction      b) radiation    c) convection      d) evaporation      e) engulfation
- a \_\_\_ 4) Over a period of a year, a bear is (hint: do bears *really* hibernate?):  
a) endothermic and homeothermic    b) ectothermic and homeothermic  
c) endothermic and poikilothermic    d) ectothermic and poikilothermic      e) none of the above
- a \_\_\_ 5) A tick that attaches to your forehead and sucks out blood is a:  
a) fluid feeder      b) bulk feeder      c) suspension feeder      d) substrate feeder
- e \_\_\_ 6) In the *long* term, excess energy (in humans) is:  
a) stored as starch in the kidneys    b) stored as glycogen in the liver    c) stored as starch in the liver  
d) stored as glycogen in the kidneys    e) stored as fat in various parts of the body
- d \_\_\_ 7) An excess of which vitamin can cause (among other symptoms) hair loss, vomiting, liver & bone damage?  
a) Vitamin D      b) Vitamin B<sub>12</sub>      c) Vitamin E      d) Vitamin A      e) Vitamin X
- c \_\_\_ 8) Normally, the epiglottis closes the opening of the trachea in response to:  
a) food moving past the pyloric sphincter    b) food moving into the cecum  
c) food moving past the trachea      d) food moving into the sinuses      e) none of the above
- e \_\_\_ 9) The cardiac sphincter controls the opening between the:  
a) stomach and large intestine      b) stomach and heart      c) stomach and small intestine  
d) small intestine and large intestine    e) stomach and esophagus
- b \_\_\_ 10) An enzyme produced in the pancreas is:  
a) bile      b) amylase    c) pepsin    d) fibrin    e) gastrin
- c \_\_\_ 11) The cecum is used to digest:  
a) proteins    b) glycogen    c) cellulose    d) starch    e) gummi-bears

- b\_\_ 12) A hormone found in the blood stream that stimulates the stomach to make gastric juice:  
 a) TSH      b) gastrin      c) thyroxin      d) aspartame      e) liquid nitrogen
- b\_\_ 13) Frogs use:  
 a) negative pressure breathing      b) positive pressure breathing      c) neutral pressure breathing  
 d) normal pressure breathing      e) frogs don't breathe - they're green so they photosynthesize
- e\_\_ 14) Smoking can do all of the following except:  
 a) destroy cilia in the trachea & bronchi      b) kill macrophages in the lungs  
 c) cause lung cancer      d) cause emphysema      e) give you youthful looking skin
- e\_\_ 15) About 440,000 people in the U.S. die every year due to:  
 a) car accidents      b) murders      c) drug abuse      d) AIDS      e) smoking
- e\_\_ 16) In the *fetus*, the right atrium sends blood to the:  
 a) left atrium      b) right ventricle      c) lungs      d) all of the above      e) a & b
- c\_\_ 17) A typical systolic blood pressure might be:  
 a) 40      b) 80      c) 120      d) 160      e) 400
- e\_\_ 18) During anaphylactic shock, which blood vessels open wide?  
 a) arteriesveins      b) venules      c) arterioles      d) veins      e) capillaries

***Material covered by exam II:***

- a\_\_ 19) You poke yourself. As part of the non-specific defense that starts, your body releases:  
 a) histamine      b) anti-histamine      c) A-cells      d) T-cells      e) B-cells
- e\_\_ 20) B-cells are matured in the:  
 a) lymph nodes      b) thymus      c) brain      d) lungs      e) bone marrow
- b\_\_ 21) A self/non-self complex is made by a/an:  
 a) IAD      b) APC      c) T-cell      d) B-cell      e) pathogen
- e\_\_ 22) Spread by the Tse-tse fly:  
 a) Chagas      b) Malaria      c) Yellow fever      d) Elephantiasis      e) Sleeping sickness
- d\_\_ 23) Sleeping sickness overcomes the immune system by:  
 a) directly attacking B-cells      b) destroying antibodies  
 c) changing from a virus into a bacteria      d) being able to switch antigens  
 e) causing an extreme allergic reaction
- e\_\_ 24) Bowman's capsule:  
 a) reabsorbs nutrients      b) sets up a salt gradient  
 c) changes the permeability of the collecting duct      d) removes  $Mg^+$  ions  
 e) captures the fluid excreted by the glomerulus
- a\_\_ 25) The proximal tubule  
 a) reabsorbs nutrients      b) sets up a salt gradient  
 c) changes the permeability of the collecting duct      d) removes  $Mg^+$  ions  
 e) captures the fluid excreted by the glomerulus

- a \_\_\_ 26) In response to blood loss, which pathway can help you save vital body fluids?  
 a) RAAS      b) FSH      c) ADH      d) ACTH      e) TSH
- c \_\_\_ 27) Glucagon is released by the:  
 a) pituitary      b) liver      c) pancreas      d) adrenal glands      e) testes
- e \_\_\_ 28) In response to this exam, your pituitary has most likely released:  
 a) MSH      b) endorphins      c) ADH      d) TSH      e) ACTH
- b \_\_\_ 29) Some sharks are:  
 a) viviparous      b) ovoviviparous      c) vivioiviparous      d) loving caring parents
- a \_\_\_ 30) Stores and matures sperm:  
 a) epididymis      b) vas deferens      c) fallopian tube      d) testes      e) none of the above
- a \_\_\_ 31) In sequence, the first glands that contribute substances to sperm coming through the vas deferens is/are the:  
 a) seminal vesicles      b) epidymis      c) Bulbourethral glands      d) prostate gland      e) ovaries
- b \_\_\_ 32) After ovulation, the follicle develops into a/an:  
 a) ovary      b) Corpus luteum      c) mature follicle      d) fertilized egg      e) pituitary
- a \_\_\_ 33) Increased contractions cause:  
 a) increased levels of oxytocin      b) decreased levels of oxytocin  
 c) decreased levels of estrogen      d) increased levels of estrogen      e) none of the above
- a \_\_\_ 34) Dendrites:  
 a) allow a signal to enter a nerve cell      b) allow a signal to leave a nerve cell  
 c) allow a signal to circumnavigate the cell      d) allow a signal to move backwards  
 e) hook directly into the axon hillock
- a \_\_\_ 35) Helps speed up the action potential in the CNS of vertebrates:  
 a) oligodendrocytes      b) Schwann cells      c) astrocytes      d) an unusually thick neuron (axon/dendrite)  
 e) inverse negative impulses
- c \_\_\_ 36) All right, which of the following is a really bad idea to give to an elephant?  
 a) acetylcholine      b) dopamine      c) LSD      d) salt tablets      e) morphine

***Material covered by exam III:***

- c \_\_\_ 37) The structure that channels sound into the auditory canal is the:  
 a) oval window      b) eustachian tube      c) pinna      d) utricle      e) cochlea
- e \_\_\_ 38) The upper end of frequencies bats can hear is about:  
 a) 30 Hz      b) 300 Hz      c) 1,000 Hz      d) 20,000 Hz      e) 100,000 Hz
- b \_\_\_ 39) In an attempt to try and figure out how bats were able to fly in complete darkness, Spallenzani  
 a) experimented with brain wave signals  
 b) poured hot wax into the ears of bats  
 c) used night vision goggles to observe how bats flew at night  
 d) generated bright flashes of light to try to confuse the bats  
 e) compared how bats flew at night with how they flew during the day

- b \_\_\_ 40) Located between the lens and the cornea:  
a) choroid    b) aqueous humor    c) retina    d) vitreous humor    e) sclera
- a \_\_\_ 41) The choroid is the:  
a) black layer just underneath the retina  
b) the tough white layer of the outside of the eye  
c) the clear part at the front of the eye that lets light into the eye  
d) the part of the eye that senses light  
e) ring of muscles that control the lens
- d \_\_\_ 42) Cones:  
a) see black and white but are more sensitive to light  
b) see color and are more sensitive to light  
c) see black and white and are less sensitive to light  
d) see color but are less sensitive to light
- c \_\_\_ 43) The sarcoplasmic reticulum releases  $Ca^{++}$  ions in response to:  
a) a muscle contraction    b) tropomyosin    c) an action potential    d) a sensory reflex  
e) lower blood calcium levels
- d \_\_\_ 44) A smooth sustained muscle contraction is known as:  
a) typhoid    b) flu    c) syphilis    d) tetanus    e) diphtheria
- b \_\_\_ 45) In the brain, ventricles:  
a) help pump blood around the body    b) are filled with cerebro-spinal fluid  
c) help determine the emotional content of messages in the brain  
d) include centers for analyzing sound    e) none of the above
- d \_\_\_ 46) The superior olive is:  
a) a Greek restaurant    b) a brand of olive oil  
c) a part of the thalamus    d) a part of the brain that lets you determine the direction of sound
- d \_\_\_ 47) The part of the cerebral cortex where we vision is analyzed:  
a) frontal lobe    b) parietal lobe    c) temporal lobe    d) occipital lobe
- e \_\_\_ 48) Two pathways go from the motor cortex. One goes to the cerebellum, the other goes to the:  
a) cerebrum    b) spinal cord    c) hypothalamus    d) occipital lobe    e) appropriate motor neuron
- d \_\_\_ 49) A plant in which the dominant form of the life cycle is haploid:  
a) Oak tree    b) Rose    c) Pine tree    d) Moss    e) Mushroom
- d \_\_\_ 50) In Gymnosperms, eggs are produced by:  
a) anthers    b) filaments    c) male cones    d) female cones    e) petals
- b \_\_\_ 51) A leaf with branched (not parallel) veins will usually come from a:  
a) monocot    b) dicot    c) tricot    d) quadrocot
- a \_\_\_ 52) A plant that grows, reproduces, and dies all within a year is a:  
a) annual    b) biennial    c) perennial    d) centennial    e) monocennial
- a \_\_\_ 53) The dark center of a tree is known as the:  
a) heartwood    b) middle wood    c) sapwood    d) mirkwood

c \_\_\_ 54) The endosperm is:  
a) diploid    b) quadroploid    c) triploid    d) haploid    e) monoploid

a \_\_\_ 55) True or false: All seedless grapes are descended from a single grape using asexual reproduction  
a) True    b) False

***New material:***

e \_\_\_ 56) Photosynthesis requires:  
a) light    b) oxygen    c) carbon dioxide    d) a & b    e) a & c

a \_\_\_ 57) True or false: Dark reactions can take place in the dark, though they usually don't:  
a) True    b) False

b \_\_\_ 58) True or false: in order to figure out how many mice are on campus, I would have to count every one:  
a) True    b) False

b \_\_\_ 59) An apple orchard, where each tree is planted a regular distance from every other tree would have what kind of dispersal pattern?  
a) clumped    b) uniform    c) random    d) impossible to tell

b \_\_\_ 60) The logistic model describes a population that:  
a) grows rapidly without end    b) grows rapidly then slows and levels off  
c) grows rapidly, then declines rapidly    d) grows slowly than declines rapidly  
e) only declines

b \_\_\_ 61) If the amount of food decreases, K would:  
a) increase    b) decrease    c) stay the same    d) change to r    e) become irrelevant

a \_\_\_ 62) An organism that produces lots of offspring, but does not invest a lot of resources into each offspring is said to be:  
a) r - selected    b) K - selected    c) i - selected    d) n - selected    e) q - selected

d \_\_\_ 63) The current human population is *about*:  
a) 1.2 billion    b) 2.6 billion    c) 3.7 billion    d) 6.5 billion    e) 8.4 billion

c \_\_\_ 64) A population pyramid with mostly straight (parallel) sides shows a population that is:  
a) increasing    b) decreasing    c) staying about the same    d) none of the above

a \_\_\_ 65) True or False: each American (U.S.A.) uses far more resources than each person in India:  
a) true    b) false

d \_\_\_ 66) Which is the most diverse community?  
a) species A: 33, species B: 42, species C: 0  
b) species A: 75, species B: 0, species C: 0  
c) species A: 70, species B: 2, species C: 3  
d) species A: 25, species B: 25, species C: 25  
e) species A: 0, species B: 0, species C: 0

d \_\_\_ 67) The barnacle example, where two species of barnacle coexisted at different heights, demonstrated:  
a) a rapidly growing population    b) a rapidly declining population    c) predation  
d) the principle of competitive exclusion    e) the effects of DDT

- b\_\_ 68) True or false: Fire is always harmful to a community:  
a) True      b) False
- b\_\_ 69) A carnivore gets roughly what percentage of the energy available to the herbivore it eats?  
a) 5%      b) 10%      c) 15%      d) 20%      e) 50%
- e\_\_ 70) Economic reasons for conserving include all of the following *except*:  
a) medicine    b) food      c) recreation    d) clothing/shelter    e) there are no exceptions on this list
- c\_\_ 71) The loss of habitat caused by new houses, buildings & shopping malls is due to:  
a) desertification    b) deforestation    c) urbanization    d) loss of wetlands
- c\_\_ 72) To protect elephants, Kenya had to introduce:  
a) electronic ankle bracelets for elephants    b) habitat reconstruction    c) helicopter gunships  
d) increased protection for rhinos    e) none of the above
- b\_\_ 73) The extinction of the passenger pigeon is due primarily to:  
a) habitat loss    b) overexploitation    c) introduced species    d) environmental factors
- d\_\_ 74) Baby sea turtles have a hard time finding the ocean due to:  
a) air pollution    b) noise pollution    c) water pollution    d) light pollution
- b\_\_ 75) Global warming might be caused by:  
a) acid rain    b) carbon dioxide    c) ozone    d) DDT    e) overzealous weather forecasters
- e\_\_ 76) In order to properly protect an animal (or other organism) we need to (there are several possible answers - pick the single *best* answer):  
a) set up a reserve    b) put it in a zoo    c) control its predators    d) provide food  
e) study the animal to know what it needs in order to survive
- d\_\_ 77) Bald eagles and other birds of prey almost went extinct due to:  
a) acid rain    b) carbon dioxide    c) ozone    d) DDT    e) overzealous weather forecasters
- c\_\_ 78) The side of the Nairobi National Park that opens to the Athi plains is the:  
a) north side    b) east side    c) south side    d) west side    e) actually, all sides are closed off

\*\*\*\*\* **You *MUST* hand in both the exam and scantron** \*\*\*\*\*

**Finally, it's over! I hope you didn't find today too miserable. Have a great remaining summer!**

**Reminder:** please put your G-number on **both** the exam and scantron.