

Part I - Multiple choice - Circle the one best choice - 1 pt each.

1. Parts of the complete chemical digestion of starch to glucose occur in the:
A) small intestine B) stomach and small intestine C) small intestine and pancreas D) mouth and small intestine E) mouth, pancreas, and small intestine
2. Using the same choice as in question 1, which organ(s) produce(s) enzymes involved in the chemical digestion of starch? _____
3. Using the same choices as in question 1, in which organ(s) is(are) the glucose absorbed? _____

Questions 4 through 8 refer to the drawing at right.

4. The area marked "B": A) is the blastopore B) is the blastocoele C) will become the coelom D) is lined by endoderm tissue E) is the archenteron
5. Cells that might ultimately become most of the circulatory system are in the tissue marked: A) A B) B C) C D) D E) E F) none of the above
6. In a protostome the part marked "A" will become the: A) urethra B) mouth C) anus D) coelom E) nothing, it disappears during further development
7. The embryo shown most likely developed from a(n) _____ egg.
A) telolecithal B) meroblastic C) centrolecithal D) isolecithal E) holoblastic
8. Which of the following is not labelled in the diagram? A) ectoderm B) mesoderm C) endoderm D) more than one of the above
9. Low estrogen levels in a young female are thought to directly inhibit the production of some hormones by the: A) anterior pituitary B) ovaries C) prostate D) hypothalamus E) follicle
10. Cells cleaved from the vegetal pole of a frog egg will eventually develop into:
A) endoderm B) neural tube tissue C) somite mesoderm D) somatic ectoderm E) none of the above

Part II - Matching - Put an appropriate letter in the blank next to each number. Some letters may be used more than once; some not at all. Some numbers may have more than one correct answer; in any case give only one in the blank. 1 pt each.

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| 1. _____ lining of the digestive system | A. neural crest |
| 2. _____ motor neurons in you arm | B. mesenchyme |
| 3. _____ lining of arteries | C. chordamesoderm |
| 4. _____ kidney tubules | D. somatic ectoderm |
| 5. _____ skin | E. endoderm |
| 6. _____ brain | F. neurectoderm |
| 7. _____ muscles in your leg | G. somite mesoderm |
| 8. _____ bones of middle ear | H. none of the above |
| 9. _____ ribs | |

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| 1. _____ surge triggers ovulation | A. follicle stimulating hormone (FSH) |
| 2. _____ increase in concentration initiates endometrium growth | B. testosterone |
| 3. _____ produced by anterior pituitary | C. progesterone |
| 4. _____ absence allows differentiation of female reproductive organs | D. gonadotropin releasing hormone (GRH) |
| 5. _____ derived from the follicle | E. corpus luteum |
| 6. _____ found in birth control pills | F. leutinizing hormone (LH) |
| 7. _____ produced by the corpus luteum | G. human chorionic gonadotropin (HCG) |
| 8. _____ produced by embryonic placenta | H. interstitial cells |
| 9. _____ stimulates sperm production | I. none of the above |
| 10. _____ produced by the hypothalamus | |

Part III - True-false - Indicate validity of each statement by placing a "T" or "F" in the margin to the left of the statement. 1 pt. each.

1. Given its function, it is highly unlikely that lions produce salivary amylase.
2. The gray crescent area in a frog embryo will later be located in the cells around the opening of the coelom.
3. The function of microvilli is to increase surface area for more efficient absorption.
4. In some organisms the opening of the archenteron will develop into the adult mouth.
5. If a man has a vasectomy (cutting and tying off the vas deferens), then there will be no seminal fluid in his ejaculate.
6. If cleavage is determinate, then it is impossible to produce identical twins.
7. The hormone cholecystinin (CCK) stimulates release of bicarbonate from the pancreas.
8. The primary function of the colon is water absorption.

Part IV - Fill-in - Put an appropriate word or phrase in each blank space. 1 pt. each blank.

1. In the stomach, the chemical digestion of _____ is begun by the enzyme _____. This enzyme is produced in an inactive form known as _____. _____ in the stomach activates the enzyme. One enzyme that completes the digestion of this macronutrient type is _____, an enzyme produced by the _____.
2. In _____ the blastopore develops into the _____ of the adult organism. Cleavage in these organisms would be termed _____.
3. The epididymis primarily functions to _____ sperm cells.

Part V - Short answer - Write an appropriate answer in the space provided. Pts as indicated.

1. Define: (3 pts each)

A. cecum

B. meroblastic cleavage

C. seminiferous tubules

D. centrolecithal egg

E. blastula

F. bilirubin

2. Draw a typical chick embryo to show the membranes surrounding the embryo. Label the membranes and give a general function for each. From which membrane does the umbilical derive in mammals; the placenta? (10 pts)

3. Describe how the process of peristalsis works. (6 pts)

4. Describe the events occurring in the luteal phase (days 14-28) of the menstrual cycle in the event that an oocyte is fertilized. (6 pts)

THAT'S IT