

NAME KEY SS# _____

Please write clearly. No credit will be given for illegible or ambiguous answers.

1. Which of the following is NOT directly involved in the modification of Eukaryotic RNA after transcription and before translation? (4 points)

- a. methyl guanine cap
- b. exons
- c. poly-A tail
- d. **promoter**
- e. splicing

2. The genetic code consists of triplets of nucleotides called codons.

Each of these codes for a single amino acid during the process of translation. (2 points each)

In the diagram below, the molecule D is inactive because it is bound to C. When active, D can bind to the structure labeled B.

3. The pattern of regulation of this operon is (4 points)

- a. **Negative induction**
- b. Positive induction
- c. Negative repression
- d. Positive repression
- e. Positively inscrutable

4. What is the general name for the molecule labeled C? signal molecule (3 pts)

5. Which of the following is NOT true of the slow block to polyspermy in the sea urchin (4 pt)

- a. it occurs before the egg and sperm nuclei have fused
- b. the cortical reaction initiates the slow block
- c. **it is an electrical response caused by membrane depolarization**
- d. it involves the release of calcium ions from within the egg
- e. all of these are true

6. List 2 functions for which male gametes are specialized (2 points each).

Movement

Locating the egg

Penetrating the egg

ANY TWO