

1. Bacterial stringent control:

- A. occurs when cells are in balanced exponential growth**
- B. includes down-regulated synthesis of special STI proteins used to protect cells in stationary phase.**
- C. includes both negative and positive strategies designed to prepare cells for stationary phase starvation survival.**
- D. includes the synthesis of new ribosomes that are modified to resist proteolytic attack.**
- E. occurs when the threshold concentration of signal molecules required to trigger quorum sensing events is lowered.**

2. An exponentially growing bacterial culture increases from 10^3 cells/ml to 10^6 cells/ml in 200 minutes. What is its generation time?

- A. 10 minutes**
- B. 20 minutes**
- C. 30 minutes**
- D. 40 minutes**
- E. 50 minutes**

3. What is the above culture's growth rate?

- A. 1/hr**
- B. 2/hr**
- C. 3/hr**
- D. 0.25/hr**
- E. 0.5/hr**

4. How long will it take to sterilize a culture at 70 °C when its Decimal Reduction Time is 10 minutes at that temperature and it initially contains 2000 viable cells?

- A. 4 minutes**
- B. 10 minutes.**
- C. 20 minutes**
- D. 30 minutes**
- E. 40 minutes**