

## Chapter 5 Microbial Growth

1. In which of the following cases of microbial growth, lag phase usually occurs?  
(A) If inoculum is taken from old (stationary phase) culture and inoculated into same medium  
(B) Inoculum consists of damaged cells (but not killed), inoculated into the same medium  
(C) Inoculum is transferred from a rich culture medium to a poorer one  
(D) If an exponentially growing culture is inoculated into the same medium under the same condition of growth
2. What are the advantages of continuous culture?  
(A) It can rarely be used for other productions  
(B) The growth rate is higher  
(C) If contamination occurs, more product will be produced  
(D) It is very useful for processes involving the production of primary metabolites
3. Which of the following are the type of continuous brewing?  
(A) Cascade system  
(B) Multistage system  
(C) Tower system  
(D) Extract brewing
4. Which of the following factors are responsible for the stability of thermophiles at high temperatures?  
(A) Presence of Inositol diphosphate  
(B) Increased leakage of cell components  
(C) Increase in thermal stability of ribosomes  
(D) Presence of large no. of polar amino acids
5. Which of the following are functions of phosphates used in the preparation of media?  
(A) They act as buffer  
(B) Source of phosphorous  
(C) Act as "reserve alkali"  
(D) They provide non-toxic
6. Which of the following examples are related with the class of metabolite, that is "Products directly associated with generation of energy in the cell"?  
(A) Penicillin  
(B) Ethanol  
(C) Acetone  
(D) Lactic acids
7. Which of the following CORRECT for Continuous fermentation?  
(A) Setup is not changed from outside once the fermentation has started  
(B) Nutrients are added many times  
(C) Closer to the natural environment  
(D) The small size of fermenters are required
8. What are the factors influence the duration of lag time?  
(A) Inoculum size

- (B) Physiological history of the cells
  - (C) Number of cells
  - (D) Precise physiochemical environment
9. The constitutive enzymes are
- (A) produced at the time of cell growth
  - (B) variable- growth associated
  - (C) growth associated
  - (D) produced all the time
10. Non-growth associated mechanisms are
- (A) cell motility
  - (B) turnover of cellular components
  - (C) adjustment of internal pH
  - (D) constitute primary metabolites

**Answer**

- 1. (A), (B), (C)
- 2. (A), (B), (D)
- 3. (A), (B), (C)
- 4. (A), (C)
- 5. (A), (B), (D)
- 6. (B), (C), (D)
- 7. (B), (C), (D)
- 8. (A), (B), (C), (D)
- 9. (A), (C), (D)
- 10. (A), (B), (C)