

MMG 301 Quiz-3 Dr. Frank B. Dazzo

Enter the **best letter** response:

1. Biotin:

1. is a growth factor required by many fastidious bacteria.
 2. is a vitamin cofactor used for fatty acid biosynthesis
 3. is a carbon source for fastidious bacteria
 4. must be added in large quantities to culture media to grow fastidious bacteria that can't make it themselves.
 5. is a toxic antimicrobial agent.
- a. all answers are correct.
 - b. only answers 1, 3, and 5 are correct.
 - c. only answers 2 and 4 are correct.
 - d. only answers 1 and 2 are correct.
 - e. only answer 2 is correct.

2. A key event in the chemotactic response of bacteria to attractants is:

- a. more frequent clockwise rotations of their flagella to prolong runs
- b. extended duration of flagellar counterclockwise rotation to swim up the attractant gradient
- c. the repeated binding of CheY-P to the flagellar motor
- d. the initial specific binding of the attractant molecule to Che-A
- e. two of the above are correct.

3. What is the generation time of a bacterial culture whose population in exponential phase increases from 10^4 to 10^6 in 3 hrs?

- a. 20 minutes
- b. 30 minutes
- c. 40 minutes
- d. 50 minutes
- e. 3 generations per hour

4. The growth rate of a bacterial continuous culture operating at a dilution rate of 0.2 hr^{-1} is:

- a. 0.4 hr^{-1}
- b. 1 hr^{-1}
- c. 0.2 hr^{-1}
- d. 5 hr^{-1}
- e. none of the above.