

Microbiology / Active Lecture Questions
Chapter 6 – Microbial Growth

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2 Two culture media were inoculated with four different bacteria. After incubation, the following results were obtained:

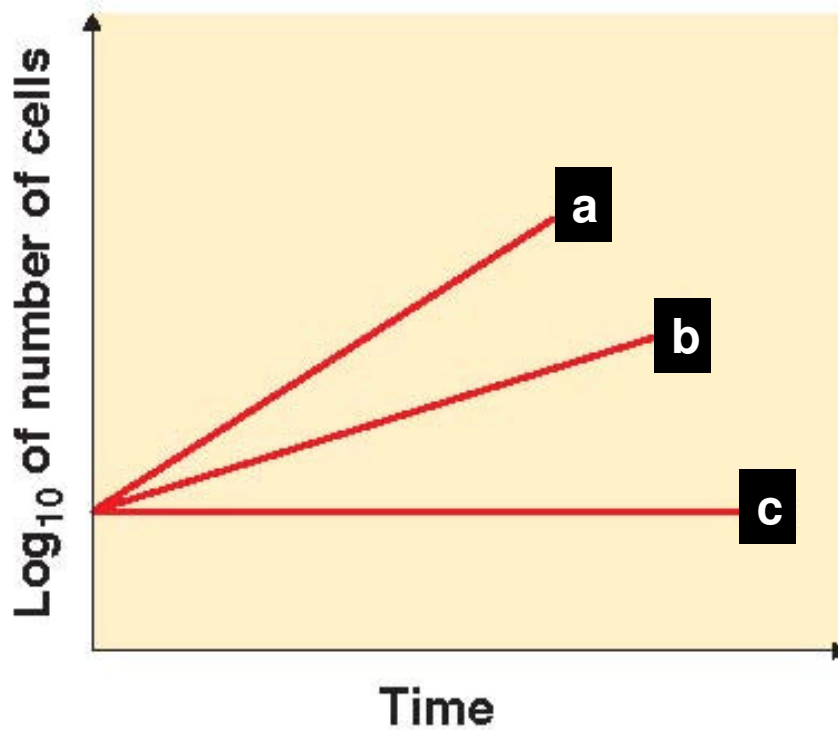
Organism	Medium 1	Medium 2
<i>Escherichia coli</i>	Red colonies	No growth
<i>Staphylococcus aureus</i>	No growth	Growth
<i>Staphylococcus epidermidis</i>	No growth	Growth
<i>Salmonella enterica</i>	Colorless colonies	No growth

Medium 1 is

- a. selective.
- b. differential.
- c. both selective and differential.

3 Medium 2 is

- a. selective.
- b. differential.
- c. both selective and differential.



4 Which of the lines best depicts the log phase of a thermophile incubated at room temperature?

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5 Which of the lines best depicts the log phase of *Listeria monocytogenes* growing in a human?

6 Assume you inoculated 100 facultatively anaerobic cells onto nutrient agar and incubated the plate aerobically. You then inoculated 100 cells of the same species onto nutrient agar and incubated the second plate anaerobically. After incubation for 24 hours, you should have

- more colonies on the aerobic plate.
- more colonies on the anaerobic plate.
- the same number of colonies on both plates.

7 The term trace elements refers to

- the elements CHONPS.
- vitamins.
- nitrogen, phosphorus, and sulfur.
- small mineral requirements.
- toxic substances.

8 Which one of the following temperatures would most likely kill a mesophile?

- 50°C
- 0°C
- 9°C
- 37°C
- 60°C

9 Which of the following is not a characteristic of biofilms?

- antibiotic resistance
- hydrogel
- iron deficiency
- quorum sensing

10 Which of the following types of media would not be used to culture aerobes?

- selective media
- reducing media
- enrichment media
- differential media
- complex media

11 An organism that has peroxidase and superoxide dismutase but lacks catalase is most likely an

- aerobe.
- aerotolerant anaerobe.
- obligate anaerobe.

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12 The optimum pH for most bacteria is

- a. 1
- b. 5
- c. 7
- d. 9

13 Organisms that require high salt concentrations for growth are called

- a. Halophiles
- b. Extreme halophiles
- c. Facultative halophiles
- d. Microhalophiles

14 In food preservation, salts and sugars are used because they create a

- a. Lower pH
- b. Hypertonic environment
- c. Hypotonic environment
- d. Lower osmotic pressure

15 Chemoautotrophs and photoautotrophs derive their carbon from

- a. Carbon dioxide
- b. Proteins
- c. Lipids
- d. Carbohydrates

16 An organism that uses oxygen but can grow without oxygen is called a(n)

- a. Obligate aerobe
- b. Facultative aerobe
- c. Aerobe
- d. Aerotolerant anaerobe

17 Biofilms reside in a matrix made up primarily of

- a. Lipids
- b. Hydrogel
- c. Proteins
- d. Polysaccharides

18 Generation time can best be defined as

- a. The length of time it takes for lag phase
- b. The duration of log phase
- c. The length of time it takes for a cell to divide
- d. The minimum rate of doubling

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19 Capnophiles must be grown in high concentrations of

- a. Oxygen
- b. Salt
- c. Glucose
- d. Carbon dioxide

20 The culture medium that is designed to suppress unwanted microbes while encouraging desired microbes is called

- a. Complex
- b. Selective
- c. Reducing
- d. Differential

21 To neutralize acids as they are produced in a culture, what should be added to the culture medium?

- a. Buffers
- b. Salts
- c. Sugars
- d. PABA

22 What can be added to a medium when it is desirable to grow bacteria on a solid medium?

- a. Glucose
- b. Magnesium sulfate
- c. Potassium phosphate
- d. Agar

23 The source of nutrients in nutrient agar is

- a. Agar
- b. Peptone and sodium chloride
- c. Peptone and beef extract
- d. Nutrient

24 A spectrophotometer can be used to measure

- a. Metabolic activity
- b. Turbidity
- c. Dry weight
- d. Pathogenicity

25 Which method is utilized to ensure that plates containing 25 to 250 colonies are counted?

- a. The most probable number method
- b. Serial dilution
- c. Filtration
- d. Spread plate method

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26 Which of the following metabolic activities can be used to measure microbial growth?

- a. Carbon dioxide consumption
- b. Oxygen consumption
- c. Glucose consumption
- d. Salt consumption