

Microbiology / Active Lecture Questions
Chapter 10 – Classification of Microorganisms

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2 Bergey's Manual of Systematic Bacteriology differs from Bergey's Manual of Determinative Bacteriology in that the former

- a. groups bacteria into species.
- b. groups bacteria according to phylogenetic relationships.
- c. groups bacteria according to pathogenic properties.
- d. groups bacteria into 19 species.
- e. all of the above

3 Bacillus and Lactobacillus are not in the same order. This indicates that which one of the following is not sufficient to assign an organism to a taxon?

- a. biochemical characteristics
- b. amino acid sequencing
- c. phage typing
- d. serology
- e. morphological characteristics

4 Which of the following is used to classify organisms into the Kingdom Fungi?

- a. ability to photosynthesize; possess a cell wall
- b. unicellular; possess cell wall; prokaryotic
- c. unicellular; lacking cell wall; eukaryotic
- d. absorptive; possess cell wall; eukaryotic
- e. ingestive; lacking cell wall; multicellular; prokaryotic

5 Which of the following is not true about scientific nomenclature?

- a. Each name is specific.
- b. Names vary with geographical location.
- c. The names are standardized.
- d. Each name consists of a genus and specific epithet.
- e. It was first designed by Linnaeus.

6 You could identify an unknown bacterium by all of the following except

- a. hybridizing a DNA probe from a known bacterium with the unknown's DNA.
- b. making a fatty acid profile of the unknown.
- c. specific antiserum agglutinating the unknown.
- d. ribosomal RNA sequencing.
- e. percentage of guanine + cytosine.

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7 The wall-less mycoplasmas are considered to be related to gram-positive bacteria. Which of the following would provide the most compelling evidence for this?

- a. They share common rRNA sequences.
- b. Some gram-positive bacteria and some mycoplasmas produce catalase.
- c. Both groups are prokaryotic.
- d. Some gram-positive bacteria and some mycoplasmas have coccus-shaped cells.
- e. Both groups contain human pathogens.

8 Into which group would you place a multicellular organism that has a mouth and lives inside the human liver?

- a. Animalia
- b. Fungi
- c. Plantae
- d. Firmicutes
- e. Proteobacteria

9 Into which group would you place a photosynthetic organism that lacks a nucleus and has a thin peptidoglycan wall surrounded by an outer membrane?

- a. Animalia
- b. Fungi
- c. Plantae
- d. Firmicutes
- e. Proteobacteria

10 Use the following choices to answer questions 9 and 10:

- 1. 9 + 2 flagella
- 2. 70S ribosome
- 3. fimbria
- 4. nucleus
- 5. peptidoglycan
- 6. plasma membrane

11 Which is (are) found in all three domains?

- a. 2, 6
- b. 5
- c. 2, 4, 6
- d. 1, 3, 5
- e. all six

12 Which is (are) found only in prokaryotes?

- a. 1, 4, 6
- b. 3, 5
- c. 1, 2
- d. 4
- e. 2, 4, 5

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13 Grouping organisms into categories to highlight similarities is called

- a. Systematics
- b. Taxonomy
- c. Hierarchy
- d. Nomenclature

14 Which of the following statements about the members of the Kingdom Animalia is FALSE?

- a. They can photosynthesize
- b. They are multicellular
- c. They use organic carbon sources
- d. They use organic energy sources

15 What is the phylogenetic classification of the Domain Bacteria based on?

- a. Cell morphology
- b. rRNA sequences
- c. Gram stain reaction
- d. Habitat

16 Viruses cannot be classified in a kingdom because

- a. Viruses are not composed of cells
- b. Viruses are obligate parasites
- c. Some viruses can incorporate their genome into a host's genome
- d. Viruses direct anabolic pathways of host cells

17 A strain can be defined as

- a. The same as a species
- b. A population of cells with similar characteristics
- c. A pure culture
- d. A group of cells all derived from a single parent

18 In the scientific name *Staphylococcus aureus*, *Staphylococcus* is the

- a. Class
- b. Genus
- c. Species
- d. Family

19 Bacteria and archaea share which of the following characteristics?

- a. Possess prokaryotic cells
- b. Sensitivity to antibiotics
- c. Peptidoglycan cell walls
- d. Methionine is the start signal for protein synthesis

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20 Fossil evidence indicates that prokaryotic cells first existed on the Earth

- a. 350 years ago
- b. 3.5 billion years ago
- c. 3500 years ago
- d. 3.5 million years ago

21 Phage typing is based on the fact that

- a. Bacteria are destroyed by viruses
- b. Phages and bacteria are related
- c. Viruses cause disease
- d. Bacterial viruses attack specific cells

22 Historically, eukaryotic organisms that didn't fit into other kingdoms were placed into which kingdom?

- a. Protista
- b. Fungi
- c. Plantae
- d. Animalia

23 Into which group would you place a multicellular organism that has a mouth and lives inside the human liver?

- a. Plantae
- b. Fungi
- c. Animalia
- d. Proteobacteria

24 Into which group would you place multi-cellular photoautotrophs?

- a. Fungi
- b. Protista
- c. Animalia
- d. Plantae

25 Biochemical tests are used to determine

- a. Staining characteristics
- b. Enzymatic activities
- c. Nucleic acid-base composition
- d. Amino acid sequences

26 Which of the following is NOT used in a standard bacteriology laboratory identification?

- a. Serological testing
- b. Morphology determination
- c. Nucleic acid-base composition
- d. Biochemical testing

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27 Nucleic acid hybridization is based on the fact that

- a. DNA is composed of genes
- b. Pairing between complementary bases occurs
- c. A chromosome is composed of complementary strands
- d. The strands of DNA can be separated

28 Which of the following statements about the kingdom animalia is false?

- a. They are multicellular
- b. They can photosynthesize
- c. They have eukaryotic cells
- d. They use carbon based energy sources

29 What is an outstanding characteristic of the kingdom fungi?

- a. All the members are photosynthetic
- b. All members are microscopic
- c. All members reproduce asexually only
- d. Members absorb dissolved organic matter.

30 A genus can be best defined as?

- a. A taxon composed of one or more species below a family
- b. A taxon belonging to a species
- c. The most specific taxon
- d. A taxon comprised of classes
- e. A taxon comprised of families

31 Phylogenetic classification is based on?

- a. Gram reactions
- b. Diseases
- c. Habitat
- d. rRNA sequences
- e. randomness