

所別：生命科學系碩士班 醫藥與環境生物科技組(一般生) 科目：微生物學

I. 單選題：(1~32 題,每題 3 分, 33 題 4 分; 答案紙上請註明題號)

1. Bacteria were first seen detail by _____ in 1684.
1. Koch 2. Hooke 3. Leeuwenhoek 4. Pasteur
2. The fungi are the major cause of infectious diseases in
1. arthropods 2. plants 3. mammals 4. bacteria
3. Select the incorrect statement about protozoa.
1. They are animal-like 2. Most are multicellular.
3. An amoeba is an example 4. They have numerous organelles
4. The cyanobacteria were once called the
1. red algae 2. blue-green algae 3. green algae 4. blue algae
5. A bacterium possesses a transport system for a substrate in which the substance is chemically altered in the process. Which type of transport system is operating?
1. diffusion 2. active transport
3. group translocation 4. facilitated diffusion
6. At which stage of the aerobic utilization of glucose by a typical microbial cell is the most energy generated?
1. glycolysis 2. oxidative decarboxylation of pyruvate
3. Krebs cycle 4. the electron transport system
7. Which of the following methods likely would be the least satisfactory for maintaining a stock culture for an extended period of time?
1. storage of a plugged tube culture at ambient temperature
2. lyophilization
3. freezing in liquid nitrogen
4. storage of a tube culture under sterile mineral oil at ambient temperature
8. Most disease-causing microorganisms are
1. mesophiles 2. autiphiles 3. psychrophiles 4. thermophiles
9. Opportunists are microorganisms that
1. never cause disease
2. cause disease when the proper condition arises
3. constantly produce beneficial effects on the host
4. always cause disease
10. Which two terms describe catabolic pathways
1. breakdown, energy released 2. breakdown, energy stored
3. buildup, energy released 4. buildup, energy stored
11. Denitrifiers change
1. nitrate to nitrite 2. nitrate to nitrogen gas
3. nitrogen gas to nitrate 4. nitrite to nitrate
12. Which bacterial genus has been used to clean up oil spills?
1. *Xanthomonas* 2. *Legionella* 3. *Pseudomonas* 4. *Enterobacter*
13. Each of the following describes coliform bacteria except
1. aerobic microorganism 2. facultative anaerobes
3. rod-shaped 4. spore-forming
14. Clonal selection explains how
1. antibodies binds to antigens 2. T cell differentiation
3. the blood passes through the body 4. the body produces many different antibodies
15. Each of the following is correct about rickettsiae except
1. Gram-negative bacteria 2. parasitize arthropods
3. tetracycline not effective in eradicating them 4. small and rod-shaped cells

注意：背面有試題

所別：生命科學系碩士班 醫藥與環境生物科技組(一般生) 科目：微生物學

16. The growth of _____ in the vagina prevents the establishment of pathogens.
 1. diplobacilli
 2. diplococci
 3. lactobacilli
 4. streptococci
17. Facultative anaerobes are capable of
 1. aerobic respiration only
 2. anaerobic respiration only
 3. aerobic and anaerobic respiration
 4. neither aerobic nor anaerobic respiration
18. Sulfur-reducing bacteria produce
 1. hydrogen sulfide
 2. oxygen
 3. sulfur gas
 4. sulfuric acid
19. Enterics are found in the human _____ system.
 1. circulatory
 2. digestive
 3. respiratory
 4. urinary
20. The bacterial enzyme beta-lactamase splits the _____ molecule
 1. erythromycin
 2. penicillin
 3. streptomycin
 4. tetracycline
21. Plant virus are normally named by the
 1. disease they cause
 2. genetic mutation
 3. host range
 4. size of their particles
22. The foot and mouth disease in pigs is caused by a
 1. abcteria
 2. fungus
 3. Protozoan
 4. virus
23. Chemolithotrophic bacteria are
 1. autotrophic, using organic compounds
 2. autotrophic, using inorganic compounds
 3. heterotrophic, using organic compounds
 4. heterotrophic, using inorganic compounds
24. Siderophores increase the solubility for
 1. iron
 2. calcium
 3. potassium
 4. sulfur
25. Each of the following is needed to produce the 12 precursor metabolites in *Escherichia coli* except
 1. glycolysis
 2. pentose phosphate pathway
 3. photosynthesis
 4. TCA
26. Cells in the center of a colony on a solid growth surface are usually in the _____ phases
 1. death or stationary
 2. lag or log
 3. log or stationary
 4. stationary or lag
27. Archaea are specifically the _____ organisms.
 1. ancient
 2. motile
 3. Photosynthetic
 4. true
28. In terms of nutrition, autotrophs are to heterotrophs as
 1. algae are to slime molds
 2. pathogenic bacteria are to harmless bacteria
 3. slime molds are to algae
 4. archaea are to eubacteria
29. A lichen is a mutualism association between a
 1. fungus and alga
 2. fungus and protozoan
 3. protozoan and bacterium
 4. protozoan and virus
30. You desire to isolate a hydrocarbon oxidizing microorganism by enrichment cultivation. Which of the following would favor your attempts?
 1. Supplement the medium with a common hydrocarbon as the sole carbon source
 2. Incubate the medium under aerobic conditions
 3. Select a source from nature which is likely to have been exposed to hydrocarbons
 4. all of above
31. The degranulation of _____ antibodies contributes to allergy.
 1. IgA
 2. IgB
 3. IgD
 4. IgE
32. Most immunologically based diagnostic tests use
 1. antigen-antibody reaction
 2. chromatography
 3. electrophoresis
 4. hemolysis tests
33. A spectrophotometer measures the _____ of a culture
 1. dry weight
 2. wavelength
 3. temperature
 4. turbidity