GENERAL MICROBIOLOGY – FIRST EXAM
2010 - 2011

1) Advantages of sterilisation by ionising radiation include
A. short sterilisation time
B. reliability of sterilisation
C. negligible rise in temperature
D. ability to sterilise equipment made of heat-sensitive materials, e.g. polystyrene
E. no deleterious effects on glassware or textile fibres

2) Ethylene oxide is commonly used for the sterilisation of
A. fibre-optic endoscopes
B. glassware
C. rubber tubings and catheters
D. prosthetic cardiac valves
E. respiratory ventilators

3) Methicillin-resistant *Staphylococcus aureus* (MRSA)
A. is usually sensitive to vancomycin
B. is more likely to cause deep-seated infection
C. is often resistant to many antistaphylococcal antibiotics
D. may cause asymptomatic colonisation
E. may be phage-typed for epidemiological purposes

4) Aminoglycoside antibiotics such as gentamicin
A. act on the bacterial cell wall
B. are active against staphylococci
C. are effective in the treatment of anaerobic myositis
D. are contra-indicated in patients with renal impairment
E. may cause loss of visual acuity in the elderly

5) The time between inoculation and the beginning of growth is usually called the
a) death phase
b) lag phase
c) log phase
d) dormant phase

6. Which of the following structures contains genes for enzymes and antibiotic resistance?

A. Plasmid
B. Pilus
C. Capsule
D. Plasma Membrane

7. Which of the following is the most important structure related to microbial attachment to cells?

A. Flagellum
B. Plasmid
C. Peptidoglycan
D. Glycocalix

8. Which of the following is not a gram-negative bug?

A. *Clostridium perfringens*
B. *Vibrio cholerae*
C. *Escherichia coli*
D. *Bordetella pertussis*

9. Which of the following is not true related to endotoxins?

A. Endotoxins are secreted from cells.
B. Can be linked to Meningococcemia
C. Produced by gram negative microorganisms
D. Can cause fever

10. Which of the following microorganisms stain well?

A. *Escherichia coli*
B. *Legionella pneumophila*
C. *Treponema*
D. *Chlamydia*

11. Which of the following is not true concerning Staphylococcus aureus?

A. S. aureus is related to inflammation.
B. S. aureus can cause pneumonia
C. S. aureus can lead to acute bacterial endocarditis
D. S. aureus does not make coagulase

12. During the lag phase of bacterial growth curve there is :
a. Increase in number
b. Increase in size
c. Increased metabolic rate
d. Decreased metabolic rate

13. Which of the following bacteria can grow in very wide range of temperatures:
a. Pseudomonas
b. Gonococcus
c. Pneumococcus

d. Spirochactes

14. What is lyophilisation ?
a. Means of destroying bacteria
b. A method of sterilization
c. Freeze drying of bacteria
d. Powdering of bacteria

15. Following are sterilized by hot air oven except:
a. Glassware
b. Swabs
c. Liquid paraffin
d. Vaccines

16. In pasteurization by holder method the temperature used is :
a. 63.c for 30 min
b. 72.c for 15 seconds
c. 100.c for 20 minutes
d. 120. c for 15 minutes

17. Ultraviolet rays are used for sterilizing:
a. Operation rooms
b. Beds
c. Hospital waste
d. All of the above

18. Disposable syringes are best sterilized by
a. Autoclaving
b. Hotair oven
c. Chemicals
d. Gamma ray

19. To be effective as an antiseptic alcohol concentration used is :
a. 100%
b. 95%
c. 70%
d. 50%

20. Which of the following is the most widespread method of genetic transfer among bacteria
a. Transformation
b. Transduction
c. Lysogenic conversion
d. Conjugation

21. Prokaryotic cells use_____ for locomotion.

a)pili
b)mitochondria
c)flagella
d)endospores
e)capsules

22. Prokaryotic cells transfer genetic information to other prokaryotic cells by the use of:

a)pili
b)mitochondria
c)flagella
d)endospores
e)capsules

23. Organisms that grow well at 55°C and have optimum growth temperatures of 70°C or higher are called:

a)psychrotrophs
b)psychrophiles
c)mesophiles
d)thermophiles
e)microaerophiles

24. A bacterium with a single polar flagellum is called:

a)monotrichous
b)lophotrichous
c)peritrichous
d)amphitrichous
e)spiral

25. Sporulation is initiated by the lack of nutrients in the media.

a) true
b) false

26. All microorganisms are best defined as organisms that:
A. cause human disease
B. lack a nucleus

C. are infectious particles
D. are too small to be seen with the unaided eye
E. can only be found growing in laboratories

27) Which activity is an example of biotechnology?
A. bacteria in the soil secreting an antibiotic to kill competitors
B. a microbiologist using the microscope to study bacteria
C. Egyptians using moldy bread on wounds
D. Eschericia coli producing human insulin
E. Public health officials monitoring diseases in a community

28) A microbiologist inoculates Staphylococcus epidermidis and Escherichia coli into a culture medium. Following incubation, only the E. coli grows in culture. What is the most likely explanation?
A. the microbiologist used too much inoculum
B. the culture is contaminated
C. the incubation temperature was incorrect
D. the culture medium must be selective
E. the culture medium must be differential

29) The Gram stain, acid-fast stain and endospore stain have the following in common:
A. used on a wet mount of the specimen
B. used heat to force the dye into cell structures
C. outcome based on cell wall differences
D. use a negative stain technique
E. are differential stains

30) The term sterile means free of all life forms.
A. true
B. false

31) Whish of the following is not a chemical component of a bacterial cell wall?
a. cellulose
b. peptidoglycan
c. teichoic acids
d. peptide chains
e. N-acetylmuramic acid

32) Which of the following best describes a plasmid?
a. A gene within the chromosome
b. Small circular piece of DNA outside the chromosome
c. The genetic material of a bacteriophage
d. Part of bacterial ribosomes
e. A single, linear strand of DNA

33) Absence of all life forms:
a. Clean
b. Disinfected
c. Sterile
d. Aseptic
e. Sanitized

34) If you were asked to sterilize a heat sensitive item which of the following would be most suitable?
a. Steam autoclave
b. Pasteurization
c. Ethylene oxide
d. Ethyl alcohol
e. Hot air oven

35) A useful method or compound for sterilizing foods such as fresh vegetables:
a. Ionizing radiation
b. Ultraviolet light
c. Steam autoclave
d. Phenols
e. Formaldehyde

36) Which of the following is commonly used to prepare incision sites for surgery and as a surgical scrub?
a. Ethyl alcohol
b. Hydrogen peroxide
c. Iodophor
d. Glutaraldehyde
e. Lysol

37) Which of the following is not true of both natural penicillins and first generation cephalosporins?
a. Contain a beta-lactam ring
b. Come from molds
c. Damage bacterial cytoplasmic membranes
d. Easily modified
e. Can be inactivated by beta-lactamases

38) Which of the following terms describes organisms that thrive in the cold?
A. Mesophiles
B. Thermophiles
C. Psychrophiles
D. Aerophiles
E. Basophiles

39) A microorganism that requires very little free oxygen

a. mesophile
b. macroaerophillic
c. microaerophillic
d. heteroaerophillic

40) A condition characterized by the multiplication of bacteria in blood.
a. septicemia
b. bacteremia
c. bulimia
d. anemia

41) Having the capacity to do something that is not compulsory, in particular - having the ability to live or adapt to certain conditions.
a. heterotrophic bacteria
b. autotrophic bacteria
c. facultative bacteria
d. normal flora

42) A microbe that can only live in the presence of oxygen
a. Strict (obligate) anaerobe
b. Strict (obligate) aerobe
c. Strict (obligate) parasite
d. Strict (obligate) saprophyte

43) The prevention of sepsis by preventing or inhibiting the growth of causative microorganism
a. immunoglobulin
b. disinfection
c. antisepsis
d. sterilization

44) A microbe that can only survive in an area without oxygen present.
a. strict (obligate) aerobe
b. strict (obligate) anaerobe
c. strict (obligate) parasite
d. strict (obligate) saprophyte

45) A visible group of bacteria growing on a solid medium, presumably arising from a single organism.
a. commensalism
b. coccal clusters
c. bacterial colony
d. bacterial culture

46) A chemical or physical agent that kills disease-causing microorganisms. Generally used on inanimate objects

a. disinfectant
b. antiseptic
c. alcohol
d. sterilant

47) The process of completely removing or destroying all life forms or their products on or in a substance.
a. disinfection
b. antisepsis
c. sterilization
d. scrubbing

48) An agent that destroys bacteria but not necessarily their spores.
a. James Bond
b. bactericide
c. autoclave.
d. viricide

49) The destruction of infectious agents by chemical or physical means directly applied to an inanimate object.
a. antisepsis
b. disinfection
c. incineration
d. cold

50) A bacteria that prefers moderate temperature and develops best at temperatures between 25 C and 40 C.
a. psychrophile
b. mesophile
c. thermophile
d. elvis