



Faculty of Science
Botany and Microbiology Department
Microbiology Mic 140
Prof Ibraheem IBM

3rd Revision in
Microbiology
MIC 140
2nd Term 1431 / 1432



CHOOSE THE CORRECT ANSWER:

1. The science that deals with the study of bacteria.
 - a. microbiology
 - b. zoology
 - c. bacteriology
 - d. protozoology
2. When bacteria are first cultured, growth is slow while the organisms acclimate to the conditions. This period is called.
 - a. stationary phase
 - b. death phase
 - c. lag phase
 - d. log phase
3. Cell walls, when they exist, usually contain peptidoglycan in
 - a. procaryotes only.
 - b. eucaryotes only.
 - c. both procaryotes and eucaryotes.
4. A bacillus bacterium with a single flagellum at each end is described as :
 - a. Monotrichous
 - b. Amphitrichous
 - c. Lophotrichous
 - d. Peritrichous
5. A method of asexual reproduction in bacteria in which the cell splits into two parts, each of which develops into a complete individual. (simple transverse division)
 - a. myosis
 - b. binary fission
 - c. vectored splitation
 - d. inverse kinematic)
6. The scientific study of microorganisms and their effect on other living organisms :
 - a. zoology
 - b. microbiology
 - c. macrobiology



- d. virology
- 7. This scientist is usually considered to be the first person to have seen microorganisms, which he called “animalcules.”
 - a. Antoni van Leeuwenho
 - b. Francisco Redi
 - c. Louis Pasteur
 - d. Robert Koch
- 8. A microbe that can only live in the presence of oxygen
 - a. anaerobe
 - b. Aerobe
 - c. parasite
 - d. saprophyte
- 9. Which is NOT a bacterial shape?
 - a. Bacilli
 - b. coccous
 - c. sprillum
 - d. pertrichous
- 10. Organisms that survive on dead tissue
 - a. a. saprophyte
 - b. b. parasite
 - c. c. anaerobe
 - d. d. aerobe
- 11. Any rod shaped organism
 - a. bacteria
 - b. coccus
 - c. spirillum
 - d. bacillus
- 12. A method of asexual reproduction in bacteria in which the cell splits into two parts, each of which develops into a complete individual. (simple transverse division)
 - a. meiosis
 - b. binary fission
 - c. vectored splitation
 - d. inverse kinematics



13. A relationship in which organisms of two different species live in close association to the mutual benefit of each.
 - a. antagonism
 - b. parasitism
 - c. synergism
 - d. mutualism
14. The living together in close association of two organisms of different species.
 - a. parasitism
 - b. symbiosis
 - c. antagonism
 - d. marriage
15. A double bacillus, two being linked end to end to each other.
 - a. diplococcus
 - b. streptobacillus
 - c. binary fission
 - d. diplobacillus
16. 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
17. Bacterial that prefer cold, thriving at temperatures between zero degrees centigrade and twenty five degrees centigrade.
 - a. mesophile
 - b. psychrophile
 - c. thermophile
 - d. facultative bacteria
18. 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



19. A prokaryotic one celled microorganism of the Kingdom Monera, existing as free living organisms or as parasites, multiplying by binary fission and having a large range of biochemical properties
 - a. virus
 - b. fungi
 - c. bacteria
 - d. protozoa
20. A large group of non-motile, gram - negative intracellular parasites.
 - a. fungi
 - b. protozoa
 - c. chlamydia
 - d. virus
21. The temperature above which bacterial growth will not take place
 - a. maximum temperature
 - b. minimum temperature
 - c. optimum temperature
 - d. obligate temperature
22. A genus of gram-negative, pathogenic, intracellular parasitic bacteria.
 - a. mycoplasmas
 - b. rickettsia
 - c. chlamydia
 - d. microaerophilic
23. A genus of gram-positive, non-motile, opportunistic bacteria which tend to aggregate in irregular grapelike clusters.
 - a. streptobacilli
 - b. diplobacilli
 - c. coccus
 - d. staphylococcus
24. 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
25. A type of bacteria that is spherical or ovoid in form.
 - a. bacillus



- b. coccus
 - c. spirillum
 - d. spirochete
26. The temperature below which bacterial growth will not take place.
- a. optimum temperature
 - b. maximum temperature
 - c. minimum temperature
 - d. obligate temperature
27. A genus of bacteria containing gram-negative rods which form a chain like colony
- a. streptobacilli
 - b. streptococcus
 - c. diplobacilli
 - d. staphylococcus
28. Organisms that survive on dead tissue
- a. saprophyte
 - b. parasite
 - c. anaerobe
 - d. aerobe
29. *Paramecium*:
- a. Multinucleated protozoa
 - b. uninucleated protozoa.
30. *Paramecium* reproduce:
- a. Sexually
 - b. Asexually
 - c. all the above.
31. *Paramecium* is :
- a. Autotrophic
 - b. Heterotrophic
 - c. All the above.



32. Anal pore in *Paramecium* function as :
- Remove wastes
 - Pump out excess water
 - Traps a bit.
33. Contractile vacuole in *Paramecium* function as :
- pump out excess water
 - remove wastes
 - absorbe nutrients.
 - All the above.
34. Oral groove in *Paramecium* :
- Sweep the food into the cell
 - Pump the excess of water
 - All the above
35. Small nucleus in *Paramecium* function as :
- Metabolic processes
 - Control the sexual reproduction pathways
36. Cilia in paramecium function as:
- Protective covering the pellicle
 - For moving
 - All the above
37. *Plasmodium*
- Move by cilia
 - Move by pseudopodia
 - Don't move
38. The protozoa are
- Multicellular



- b. All unicellular
 - c. Both
39. *Giardia*
- a. Move by flagella
 - b. Move by cilia
 - c. Move by pseudopodia
 - d. Don't move
40. *Fucus* is representative form of
- a. Red algae
 - b. Brown algae
 - c. Ascomycetes
 - d. Viruses.
41. They have silica in their cell walls:
- a. Chlorophyta
 - b. Bacillariophyta
 - c. Phaeophyta
 - d. All the above
42. Euglenophyta are
- a. Phototrophyic
 - b. Heterotrophic
 - c. All the above
43. The main pigment in Chlorophyta is
- a. Starch
 - b. Chlorophyll (a)
 - c. Xanthophylls
44. The main constituents of fungal cell wall is
- a. Cellulose



- b. Silica
 - c. Chitin
45. Fungi are
- a. Heterotrophic
 - b. Autotrophic
 - c. All the above
46. Lichens are
- a. Symbiosis between fungus and cyanobacterium
 - b. Symbiosis between fungus and bacteria
 - c. All the above
47. Mycorrhiza are
- a. Fungal parasites on roots of higher plants
 - b. Symbiosis between fungus and roots of higher plants
 - c. Saprophytic processes of fungal hyphae on roots of higher plants.
48. Mycorrhiza are
- a. Endophytic Mycorrhiza
 - b. Ectophytic Mycorrhiza
 - c. All the above
49. Obligate parasitic fungi are
- a. Grow on dead organic matters
 - b. Grow only on their living hosts
 - c. All the above
50. Facultative parasitic fungi such as
- a. *Fusarium*
 - b. *Puccinia gramins*



- c. *Rhizopus*
51. Fungi are
- Aerobes
 - An aerobes
 - All the above
52. Reserve food materials in fungi are
- Starch
 - Glycogen
 - Cellulose
53. Antiseptic agents are:
- Physical agents and applied for inanimate objects
 - Chemical agents and applied for inanimate objects
 - Chemical agents and applied for skin and mucous membranes.
 - Chemical agents and applied most for foods
 -
54. Disinfectant agents are:
- Physical agents and applied for inanimate objects
 - Chemical agents and applied for inanimate objects
 - Chemical agents and applied for skin and mucous membranes.
 - Chemical agents and applied most for foods
55. Preservative agents are:
- Physical agents and applied for inanimate objects
 - Chemical agents and applied for inanimate objects
 - Chemical agents and applied for skin and mucous membranes.
 - Chemical agents and applied most for foods
56. Sterilization of liquids can be achieved by :
- Autoclave
 - Incineration
 - Dry heat
57. Ozone used
- As disinfectant for water
 - For reduce water activity



Mark with black colour the right answers:

58. The genetic material of bacteria is composed of
O. ATP
O. DNA
O. ribosomes
O. protein
59. Bacterial cells
O. are usually larger than typical eucaryotic cells.
O. do not possess a cell wall.
O. do not have a membrane around their genetic material.
O. usually reproduce by a large cell fragmenting into many small cells.
60. Which of the following is not a common bacterial shape?
O. doughnut
O. rod
O. coccus
O. spirillum
61. Who was the first person to describe microorganisms?
O. Louis Pasteur
O. Antony Van Leewenhoek
O. Robert Koch
62. Who showed that microorganisms caused fermentation and that some microorganisms could live in the absence of oxygen?
O. Louis Pasteur
O. Anton Van Leewenhoek
O. Robert Koch
63. He was the first scientist difference between the "smallpox" and "measles",
O. Louis Pasteur
O. Abu Bakr El-Razi
O. Abu El-kasim El-Zhrawy
64. He wrote a medical encyclopedia and wrote books on open abscess, symptoms and treatment, which are the microbial diseases



- ☐ Louis Pasteur
- ☐ Abu Bakr El-Razi
- ☐ Abu El-kasim El-Zhrawy

Chose False or True

- 65. Whittaker (1969), classify the living organisms to four kingdoms.
 - ☐ True
 - ☐ False
- 66. All bacteria are prokaryotic.
 - ☐ True
 - ☐ False
- 67. Microbiology is the study of organisms and agents too small to be seen clearly by the unaided eye.
 - ☐ True
 - ☐ False
- 68. This kingdom Monera includes all primitive forms which reproduce sexually by motile units.
 - ☐ True
 - ☐ False
- 69. Some bacteria can be photosynthetic
 - ☐ True
 - ☐ False
- 70. MonoBacilli is a duple spherical bacterial cells
 - ☐ True
 - ☐ False
- 71. Diploococci is a single rood-shaped bacterial cells
 - ☐ True
 - ☐ True
 - ☐ False
- 72. Sarcinae is a tetra spherical bacterial cells
 - ☐ True
 - ☐ False
- 73. Spirillia. Coiled forms exhibiting twists with one or more turns ☐



- ☐ True
- ☐ False
- 74. Actinomycetes consists of mycelium just like fungi
 - ☐ True
 - ☐ False
- 75. Vibriones. The cell resemble a comma in appearance
 - ☐ True
 - ☐ False
- 76. Monotrichous bacteria. One flagellum attached to one pole of the cell.
 - ☐ True
 - ☐ False
- 77. Lophotrichous bacteria. A tuft of flagella at one pole of the cell.
 - ☐ True
 - ☐ False
- 78. Amphitrichous bacteria. A single or a tuft of flagella at the two poles of the cell.
 - ☐ True
 - ☐ False
- 79. Peritrichous bacteria. Many flagella distributed over the whole surface of
 - ☐ True
 - ☐ False
- 80. *Nitrosomonas*, oxidizes ammonia or ammonium salts to nitrites with a release of energy.
 - ☐ True
 - ☐ False
- 81. *Nitrobacter*, oxidizes nitrites to nitrates with a release of energy
 - ☐ True
 - ☐ False
- 82. *Thiobacillus thiooxidans*, oxidizes sulphur with a release of energy.
 - ☐ True
 - ☐ False



Fill in the blanks

83. Robert Hooke published a book

.....

84. Ferdinand J Cohn used the term

.....

85. Louis Pasteur developed the process for sterilizing milk and this was
named after him

86. Many microorganisms which prepare their food through photosynthesis are
called

87. Circular DNA called is present in
bacteria

88. Diplobacilli eubacteria occur in

89. Vibrionae bacteria resemble a in appearance.

90. Asexual reproduction in bacteria is by

91. Peritrichous many distributed over the whole surface of the cell.

92. All are eukaryotes.

93. The bacterial cell wall was found to consist of 3 layers, the outermost
being, the middle being,
and a rigid innermost layer of

94. Bacterial cytoplasmic membrane (plasma membrane) lies immediately
beneath the inner surface of It is composed of
..... and functions as Barrier.



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95. Bacteria do not have, instead, their genetic material is a single circular loop of
96. Chemical analysis of bacterial flagella shows that it is composed of protein called
97. Many eubacteria have layer called a which protect the cell .
98. MonoBacilli is a duple spherical bacterial cells
99. Under unfavourable environmental conditions, some bacilli can form endospores. The formed spores may be located either..... or or
100. The red pigment of algae is called, while the blue pigment is called
101. Symbionts are with other organism
102. In aerobic respiration microbes require
103. Some cyanobacteria live in environment.
104. Filaments of cyanobacteria are called as
105. Heterocysts are present in
106. Particles of viruses can be counted by microscope.
107. Euglenoids store energy as a type of polysaccharide.
108. Diatoms have shells.



Put True or False with correct the wrong

109. Sarcinae means the cell divides in three planes resulting in 8 cells ().
.....
110. Spirilla form of bacteria resemble a comma in appearance ().
.....
111. Bacteria reproduces sexually ().
.....
112. Kingdom Monera included both bacteria and cyanobacteria ().
.....
113. Bacterial cell is filled by cytoplasm ().
.....

Write the scientific name:

114. He published a book of micrographia
(.....).
115. Agent which inhibit microbial growth is called
(.....).
116. Agent which killing the microbe is called
(.....).
117. Sterilization of milk by mild heat to reduce the number of
microorganisms is called
118. Antibiotics which produced by microorganisms are called
.....



119. Antibiotics which produced by microorganisms and modified by organic chemist are called
120. Antibiotics which are effective against both G+ve and G-ve bacteria are called
121. Antibiotics which are effective against only G+ve or G-ve bacteria are called
122. Antibiotic which effective against single organism is called
123. He discovered the science of Immunology
(.....).
124. Louis Pasteur developed the process which called
(.....).
125. They require free supply of oxygen.
(.....).
126. They grow in complete absence of oxygen.
(.....).
127. They can live either in presence or absence of oxygen.
(.....).
128. They can build up complex organic substances such as carbohydrates from simple inorganic sources (CO₂ and water).
(.....).
129. Heterotrophs live either as:
- a. on plants, animals and humans causing serious diseases.

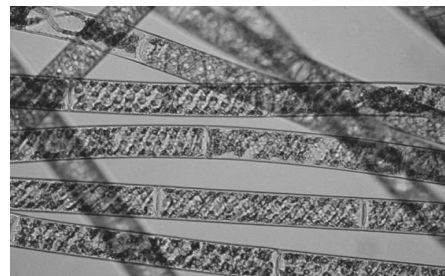


- b. on dead organic matter.
- c. with other living organisms, sharing benefit

Identify these organisms



A



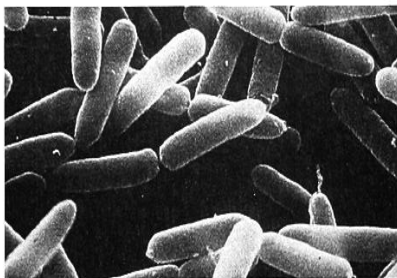
B



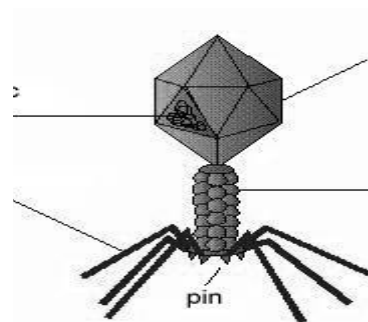
C



D



E



F



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Match these sentences

Words	Sentences
1. Capsoids	A green algae
2. Virology	Lives as parasitic.
3. Saprophytes	Moves by cilia.
4. Phycology	Have similar gametangia and non-septated hyphae.
5. <i>Plasmodium</i>	the branch of science dealing with viruses
6. <i>Volvox</i>	Protein subunits of virus coat
7. Zygomycetes	Moves by pseudopodia
8. Amoeba	Used as chemical agents
9. Viruses size	Used as physical agents
10. <i>Paramecium</i>	Exclude the microbial cells in liquids and gases.
11. Ethylene oxide	The branch of science dealing with algae.
12. Gamma rays	Range between 10 and 300 nanometers
13. Bacterial filters	Microbes live on dead materials



State whether the statement is True or False.

Statement	True	False
1. Diatoms are multicellular organisms		
2. Viral genome contains either DNA or RNA		
3. Attachment is a specific binding of a virus.		
4. True algae belong to kingdom Monera		
5. viruses need non- living host to replicate		
6. <i>Spirogyra</i> is example of unicellular green algae.		
7. Sporozoans are move by cilia		
8. Prokaryotes have nuclear membrane		
9. Sporozoans are all parasites		
10. <i>Volvox</i> has pseudopodia for movement		
11. Coenocytic hyphae are essentially uninucleate		
12. Green algae store their energy as starch		
13. Akinetes are present in eubacteria		
14. <i>Rhizopus</i> have septated hyphae		
15. <i>Penicilium</i> and <i>Aspergillus</i> have branched and septated hyphae		



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Mention the topic steps (titles only) of virus infections:

1.
2.
3.
4.
5.

With best wishes