



Time: 2 Hours  
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Benha University.  
Faculty of Science.  
Botany and Microbiology Department.



**FINAL EXAM OF GENERAL MICROBIOLOGY**  
**(CODE NO. 291 B).**

**Question 1: Choose the correct answer:**

- 1- In Sarcina the bacterial cell divides in ..... plane.  
A-One                                      B- three                                      C- four                                      D- none of these
- 2- In diplococci bacterial cell divides in .....planes.  
A- one                                      B- three                                      C- four                                      D- two
- 3- In streptococci bacteria the cell divides in.....planes.  
A- two                                      B- one                                      C- several                                      D- A&B
- 4- In tetracocci the bacterial cell divides in ..... Planes.  
A- four                                      B-three                                      C- two                                      D- one
- 5- In staphylococci the bacterial cell division occur in ..... planes.  
A- several                                      B-two                                      C- four                                      D- none of these
- 6- streptomyces abundant in the .....  
A- water                                      B- air                                      C- soil                                      D- all of these
- 7- Several antibiotic drugs are obtained from species of ..... .  
A- spirilla                                      B- sarcina                                      C- streptomyces                                      D- staphylococci
- 8- Spirochaetes bacteria don't possess .....  
A- granules                                      B –cell wall                                      C –cytoplasmic membrane                                      D- none of these
- 9- Bacterial cell wall is relatively .....  
A- permeable                                      B –semipermeable                                      C – rigid and elastic                                      D- none of these
- 10- The bacterial cell wall is composed of all of these except .....  
A- Murein                                      B- glycopeptides                                      C- mucopeptide                                      D- flagellin
- 11- .....is take on the cytoplasmic membrane.  
A- oxidative phosphorylation                                      B- motility                                      C- cell division                                      D- none of these
- 12- Flagella is composed of .....  
A- glucose                                      B- murine                                      C- flagellin                                      D- none of these
- 13- In amphitrichous bacteria there is a single or tuft of flagella are attached at the.....poles  
A- One                                      B- two                                      C- A&B                                      D- none of these
- 14- In lophotrichous bacteria there are..... Flagella are attached to one pole of the cell.  
A- one                                      B- two                                      C- tuft                                      D- none of these
- 15- ..... the general and official method of reproduction in bacteria cell.  
A- cell division                                      B- conidia                                      C- budding                                      D- conjugation
- 16- In aerobes the bacterial cell requires.....  
A-CO<sub>2</sub>                                      B- O<sub>2</sub>                                      C- N<sub>2</sub>                                      D- none of these
- 17- In facultative aerobes bacteria can live in ..... .  
A- absence of oxygen                                      B-presence of oxygen                                      C- A&B                                      D- none of these
- 18- The autotrophic bacteria include .....bacteria.  
A- parasites                                      B- saprophytes                                      C- symbiotic                                      D- chemosynthetic
- 19- all these bacteria are chemosynthetic bacteria except.....bacteria.  
A- iron                                      B – nitrifying                                      C– sulphur                                      D- parasites
- 20- All of these bacteria are heterotrophs bacteria except.....  
A- Hydrogen oxidizing                                      B- symbiotic                                      C- parasites                                      D- saprophytes

- 21- Fungi can reproduce.....  
 A- sexual                      B- asexual                                      C- A&B                                      D- none of these
- 22- Bacteria which obtain their food from living organism-s are .....  
 A- Parasites                      B- photosynthetic                      C- saprophytes                      D-chemosynthetic
- 23- Fungi can be defined as.....  
 A- Chlorophyllous                      B- non- Chlorophyllous                      C- A&B                      D- none of these
- 24- The stored food material in fungi is.....  
 A- glycogen                      B- starch                      C- lipid                      D- protein
- 25- Most fungi are .....  
 A- non-aerobic                      B- aerobic                      C- facultative aerobic                      D- all of these
- 26- Fungi digest food .....its body.  
 A- inside                      B- outside                      C- A&B                      D- none of these
- 27- In aspergillosis disease the fungi invades organs like.....  
 A- heart                      B- lungs                      C- ears                      D- B&C
- 28- The infection terminated by disease called.....  
 A- pathogenic                      B-silent infection                      C-nonpathogenic                      D-none of these
- 29- Avirulent bacteria.....  
 A- produces sever disease    B- produces a mild disease    C- completely unable to produce disease    D- none of these
- 30- Virulent *diphtheria bacilli* produce powerful toxin which affect the .....system.  
 A- respiratory                      B- circulatory                      C- nervous                      D- B&C
- 31- HCl acid of stomach is .....  
 A- fungicidal                      B- bactericidal                      C-antivirus                      D- all of these
- 32- The .....in genital system inhibit the growth of pathogen.  
 A- acidic                      B- neutral                      C- alkaline                      D- B&C
- 33- In aerobic fermentation the absorbed O<sub>2</sub> acts as .....  
 A- hydrogen                      B- nitrogen                      C- carbon                      D- sulfur
- 34- In Embden -Myerhof- Pathway: glucose-6- phosphate covert to fructose-1,6-diphosphate in the presence of .....  
 A- aldolase                      B - enolase                      C- carboxyl                      D- phosphor-hexakinase
- 35- In EMP 2phospho-glyceric acid converted to pyruvic acid in the presence of .....  
 A- enolase                      B- carboxylase                      C- aldase                      D- A&B
- 36- EMP pyruvic acid is converted to Acetaldehyde + CO<sub>2</sub> in the presence of.....  
 A- phosphor-hexakinase                      B- carboxylase                      C- enolase                      D- aldolase
- 37- Microbial protein has high vitamin content mainly .....  
 A- vitamin C                      B- vitamin A                      C- vitamin B                      D- all of these
- 38- Factors that may be limit use of single cell protein as protein source include.....  
 A- unacceptable color    B- disagreeable odour    C- non-digestible cell wall    D- all of these
- 39- The factor that may promote microbial protein production .....  
 A- cheap                      B- rapidly manufacturing proteins                      C- A&B                      D- high content of nucleic acid
- 40- The destruction of the non- digestible cell wall taken by.....  
 A- autolysis with NaCl 25%    B- treatment with urea    C- treatment urea and sodium carbonate    D- all of these
- 41- The nucleic acid diminishing in single cell protein extraction taken with.....  
 A- 20% NaCl                      B- 10% NaCl                      C- 50% NaCl                      D- none of these
- 42- One of the major problems encountered in synthesis of cortisone is introduction of oxygen atom at position.....  
 A- 9                      B- 10                      C- 11                      D- 5
- 43- We add sodium carbonate in destruction of the non- digestible cell wall to neutralization .....  
 A- HCl                      B- NaCl                      C- FeCl<sub>3</sub>                      D- CaCl<sub>2</sub>
- 44- Progesterone is converted to ..... hydroxy progesterone by *Rhizopus niger*.  
 A- 11 - $\alpha$                       B- 9- $\beta$                       C- 8-  $\gamma$                       D- 11-  $\beta$

- 45- Epicortisol can be oxidized with .....to give cortisone.  
A- CrO<sub>3</sub>                      B- HCl                      C- H<sub>2</sub>SO<sub>4</sub>                      D- none of these
- 46- ..... inhibit the growth of or kills another microorganisms.  
A- Antibiotic                      B -Antigen                      C – cytokinase                      D- histamine
- 47- .....it is foreign substances which introduce into the body and stimulate a specific immune response.  
A- Antibodies                      B- paratopes                      C- Anti-coagulating                      D- Antigen
- 48- Penicillin is non-active against.....  
A- G+ve bacteria                      B- actinomycetes                      C- G-ve bacteria                      D- all of these
- 49- Penicillin easily destroyed by.....  
A- alkaline                      B- acid                      C- heat                      D- B&C
- 50- The optimum pH in penicillin production ranging between .....  
A- 5.5 to 6                      B- 7 to 7.5                      C- 5 to 5.5                      D- none of these
- 51- In penicillin fermentation production the PH rises to 8 or higher because depletion of .....  
A- fructose                      B- lactose                      C- glucose                      D- sucrose
- 52- In penicillin production oil is added as .....  
A- antifoam                      B- promoting                      C- inhibiting                      D- none of these
- 53- In streptomycin production .....is required in the medium to regulate the concentration of phosphorus in the medium.  
A-sodium                      B-calcium                      C- chloride                      D- ferric
- 54- The isolation of streptomycin from the culture fluid is treated with .....acid to remove proteins, organic bases and metal ions.  
A- kojic                      B- oxalic                      C- citric                      D- galic
- 55- Streptomycin is removed from the culture fluid by .....  
A- Ion exchange columns                      B- chromatography method                      C- A&B                      D- none of these
- 56- During fermentation for Dextran production the PH is lowered due to the production of .....acids.  
A- Amino                      B- organic                      C- A&B                      D- none of these
- 57- .....is required for dextran fermentation production.  
A- aeration                      B- no aeration                      C- facultative aeration                      D- none of these
- 58- Dextran is precipitated by .....  
A- methanol                      B- ethanol                      C- butanol                      D- isopropanol
- 59- The microorganism used for citric acid production is .....  
A- *Aspergillus oryzae*                      B- *Aspergillus terreus*                      C- *Aspergillus niger*                      D- *Aspergillus fumigatus*
- 60- In vitamin B12 production the .....is added to the media as a precursor.  
A-CaCl<sub>2</sub>                      B- FeCl<sub>3</sub>                      C- NaCl                      D- CoCl<sub>2</sub>
- 61- Bacteria are .....organisms.  
A- eukaryotic                      B- unicellular                      C- multicellular                      D- none of these
- 62- Monotrichous bacteria have.....flagellum is attached to one pole of the cell.  
A- many                      B- single or tuft                      C- one                      D- tuft
- 63- The skin protects the body from bacteria through secretion of .....  
A- lysozymes                      B- sebaceous secretions                      C- sweat                      D- All of these
- 64- .....it is a mean by which the microbes enter into relationship with the host.  
A- immunity                      B- Antigen                      C- Antibodies                      D- Infection
- 65- Bacteria which obtain their food from organic matter are .....  
A- saprophytes                      B- photosynthetic                      C- Parasites                      D-chemosynthetic
- 66- Fungi are ..... organisms.  
A- heterotrophic                      B- Photosynthetic                      C- chemosynthetic                      D- none of these
- 67- Selective permeability and transport of solutes are controlled by.....  
A- cell wall                      B- cytoplasmic membrane                      C- nucleus                      D- cytoplasm

- 68- The enzymes that function in the biosynthesis of DNA and cell wall in bacteria found in.....  
 A- cytoplasmic membrane      B- cytoplasm      C -Cell wall      D- nucleus
- 69- ..... have great resistance to high osmotic pressure.  
 A- protozoa      B- virus      C- bacteria      D- Fungi
- 70- Fungi are ..... organisms.  
 A- prokaryotic      B - unicellular      C- eukaryotic      D- none of these
- 71- The hair of the ..... acts as filter to foreign particles invalid with air.  
 A- hands      B- nose      C- head      D- all of these
- 72- .....include the bacteria which grow in complete absence of oxygen.  
 A- Facultative aerobes      B- Anaerobes      C- Aerobes      D- none of these
- 73- Host – resistance to microbial infection depends on.....  
 A- Non-specific factor      B- specific response against microbes      C- A&B      D- none of these
- 74- The *pneumococcus* produce infection through .....  
 A- Toxin      B- ability to invade and multiply in the tissue      C- A&B      D- none of these
- 75- *Staphylococcus aureus* is ..... cocci  
 A- motile, spore forming      B- motile, non-spore forming      C- non-motile, non- spore forming      D- none of them
- 76- *E. coli* is ..... bacilli  
 A- Gram negative, motile      B-Gram positive, motile      C-Gram negative, non-motile      D- None of them.
- 77- *E. coli* possess 3 different antigen which are .....  
 A- O, K and E antigens      B- O, H and K antigens      C- O, K and A antigens      D- None of them
- 78- Travelers’ “infantile” diarrhea is mainly caused by .....  
 A- Enteropathogenic *E. coli*      B- Enterotoxigenic *E. coli*      C- Enteroinvasive *E. coli*      D- Enteroaggregative *E. coli*
- 79- Interfering of Enteropathogenic *E. coli* with the absorption power of the intestine villi leads to .....  
 A- neonatal diarrhea      B- hemorrhagic colitis      C- meningitis      D- All of them
- 80- Invasion of ..... leads to dysentery-like diarrhea.  
 A- Enteropathogenic *E. coli*      B- Enterotoxigenic *E. coli*      C- Enteroinvasive *E. coli*      D- Enteroaggregative *E. coli*
- 81- Diarrhea in HIV is mainly caused by .....  
 A- Enteropathogenic *E. coli*      B- Enterotoxigenic *E. coli*      C- Enteroinvasive *E. coli*      D- Enteroaggregative *E. coli*

### **Question 2: Put true or false**

- 1- The soil bacteria responsible for the decaying of crops dead animals and plant remains. ( )
- 2- Bacteria don't play essential role in soil fertility. ( )
- 3- Low virulent bacteria produce a mild disease. ( )
- 4- The digestive enzymes in genital system have antimicrobial action. ( )
- 5- The stratified epithelium of adult vagina is resistant to penetration by bacteria. ( )
- 6- The cough reflex helps to attach foreign particle. ( )
- 7- *Staphylococcus aureus* causes toxic shock syndrome in adults ( )
- 8- MRSA is a form of *Staphylococcus aureus* that is resistant to numerous antibiotics. ( )
- 9- *E. coli* ferment lactose and give rose pink colonies on MacConkey's medium ( )
- 10- O antigen is present on the *E. coli* flagella ( )
- 11- Diarrhea is one of the extraintestinal diseases caused by *E. coli* ( )
- 12- Urinary tract infection is one of the major intestinal diseases caused by *E. coli* ( )
- 13- *Salmonella* is a gram positive cocci ( )
- 14- Enteric (typhoid) resulting from *salmonella* invasion with the bloodstream ( )
- 15- Acute gastroenteritis, resulting from a foodborne infection/intoxication. ( )

*With our best wishes*

## Model Answer

### Question 1: Choose the correct answer

|     |   |
|-----|---|
| 1.  | B |
| 2.  | A |
| 3.  | B |
| 4.  | C |
| 5.  | A |
| 6.  | C |
| 7.  | C |
| 8.  | B |
| 9.  | C |
| 10. | D |
| 11. | A |
| 12. | C |
| 13. | B |
| 14. | C |
| 15. | A |
| 16. | B |
| 17. | C |
| 18. | D |
| 19. | D |
| 20. | A |
| 21. | C |
| 22. | A |
| 23. | B |
| 24. | A |
| 25. | B |
| 26. | B |
| 27. | D |
| 28. | A |
| 29. | C |
| 30. | D |
| 31. | B |
| 32. | A |

|     |   |
|-----|---|
| 33. | A |
| 34. | D |
| 35. | A |
| 36. | B |
| 37. | B |
| 38. | D |
| 39. | C |
| 40. | D |
| 41. | B |
| 42. | C |
| 43. | A |
| 44. | A |
| 45. | A |
| 46. | A |
| 47. | D |
| 48. | C |
| 49. | D |
| 50. | A |
| 51. | B |
| 52. | A |
| 53. | B |
| 54. | B |
| 55. | C |
| 56. | B |
| 57. | B |
| 58. | A |
| 59. | C |
| 60. | D |
| 61. | C |
| 62. | C |
| 63. | D |
| 64. | D |
| 65. | A |
| 66. | A |
| 67. | B |

|     |   |
|-----|---|
| 68. | A |
| 69. | D |
| 70. | C |
| 71. | B |
| 72. | B |
| 73. | C |
| 74. | B |
| 75. | C |
| 76. | A |
| 77. | B |
| 78. | B |
| 79. | A |
| 80. | C |
| 81. | D |

## **Question 2: Put true or false**

|     |       |
|-----|-------|
| 1.  | True  |
| 2.  | False |
| 3.  | True  |
| 4.  | False |
| 5.  | True  |
| 6.  | False |
| 7.  | True  |
| 8.  | True  |
| 9.  | True  |
| 10. | False |
| 11. | False |
| 12. | False |
| 13. | False |
| 14. | True  |
| 15. | True  |