

GOVERNMENT AUTONOMOUS COLLEGE, ROURKELA

DEPARTMENT OF BIOTECHNOLOGY

QUESTION BANK

PAPER- C 1

TITLE: MICROBIOLOGY

1. Fill in the blanks:

- a. Bacteria have been put in the kingdom Monera because they are _____.
- b. _____ bacteria are characterized by the presence of N-acetyl muramic and N- acetyl glucosamine in their cell wall.
- c. Viroids are subviral pathogenic particles consisting of short strand of naked _____.
- d. _____ are small proteinaceous infectious particles that do not contain nucleic acids.
- e. Archaeobacteria are characterized by the _____ of muramic acid and D-amino acid in their cell walls.
- f. _____ proposed a three domain system for the classification of organisms.
- g. _____ are prokaryotes without a cell wall, hence highly pleomorphic.
- h. In cyanobacteria, the photosynthesis is oxygenic, whereas in eubacteria, it is _____.
- i. _____ use light as a source of energy but use organic compounds as carbon source instead of carbon dioxide.
- j. Green non-sulphur bacteria and purple- sulphur bacteria are common examples of _____ heterotrophs.

2. Very short answer questions:

- a. Name the technical term applied to the organisms which does not have nuclear wall.
- b. Who postulated the germ theory of disease?
- c. Give an example of chemosynthetic bacterium.
- d. Name a chemoautotrophic bacterium.
- e. Name a photoautotrophic bacterium.
- f. What are prions?
- g. Name the scientist who first discovered prions.

- h. What are viroids?
- i. Who proposed the five kingdom for the classification of organisms?
- j. Name the three domains recognized by Woese.
- k. Tell one distinguish features between Eukaryotes and Prokaryotes.
- l. Write a distinguish character of Eubacteria.
- m. Name the microorganism responsible for red rot of milk.
- n. Name the microorganism responsible for green rot of egg.
- o. Name two microorganisms responsible for ropy fermentation of milk.

3. Short answer questions:

- a. What logic is used to divide living organisms into five kingdoms?
- b. “ Despite the great heterogeneity in protistans, there are features that all members share.” Comment.
- c. How will you differentiate a photoautotroph with that of chemoautotroph?
- d. Differentiate viruses with that of viroids.
- e. Write the distinguishing features of Archaeobacteria and Eubacteria.
- f. In what respects a prokaryotic cell differs from that of Eukaryotic cell.
- g. Write a brief note on prions.
- h. Name a few diseases of human caused by rickettsias.
- i. Classify microbes on the basis of energy and carbon sources.
- j. What is pure culture?
- k. Describe in brief some important methods of sterilization.
- l. Write a note on pasteurization.
- m. What is an autoclave?
- n. How a pure culture is obtained from mixed culture?
- o. What are the functions of protein coat and nucleic acid of a virus?

4. Long answer questions:

- a. Describe the characteristics of viruses. Differentiate between plant and animal viruses.
- b. Describe the structure of Tobacco Mosaic viruses.
- c. What are the general principles of methods of isolation and cultivation of microorganisms?
- d. Describe the methods of isolation and inoculation of bacteria in any bacterial disease studied by you.
- e. Give an outline of the five kingdom system of classification.

- f. What are microorganisms? Write important features of the main groups of microorganisms.
- g. Describe briefly the structure of bacteria cell.
- h. What is genetic recombination?
- i. Discuss genetic recombination in bacteria.
- j. Describe the mode of nutrition in bacteria.
- k. What are antibiotics? Give an account of antibiotics in bacterial origin.
- l. Describe different qualities essential in a good antibiotics.
- m. Give general account of viruses.
- n. Draw labelled diagram of bacteriophage. Describe the method of its reproduction.
- o. Write an essay on the transmission of viruses.

