KERALA AGRICULTURAL UNIVERSITY

B.Sc.(Hons.) Agriculture – 2010 Admission - I{st} Semester
Final Examination – March/April 2011

Cat. No. : Micr 1101

Title   : Agricultural Microbiology (2+1)

Max. marks: 80

Time   : 3 hours

I A. Fill up the blanks

(10×0.5 = 5)

1) E.H.Haeckel proposed the kingdom---------for unicellular microorganisms that were typically plants and animals.
2) The maximum useful magnification obtained with light microscope is-----------
3) Flagella of spirochetes are called-------flagella
4) ------- are organisms that make use of carbon dioxide as the main source of carbon
5) Media developed to enhance the growth and predominance of a particular type of bacteria and to suppress the growth of unwanted microorganisms are called--------media
6) Glycolysis is a dissimilatory pathway that result in break down of a molecule of glucose to two molecules of--------
7) The breed smear procedure is a microscopic technique for counting bacteria in ----
8) Viroids do not have a----------
9) ------ is the process by which ammonia is oxidized to nitrate
10) The most important microorganism to be eliminated from canned   food is--------

I B. State true or false

(10×0.5 = 5)

1) Prior to the work of Carl Woese it was thought that eucaryotes had evolved from prokaryotes
2) Lyophilization is a method for characterizing microorganisms
3) The process by which some bacteria use gaseous nitrogen as a source of nitrogen for cell material is called nitrogen fixation
4) Under aerobic condition *Rhodospirillum rubrum* depends on light as its energy source and lives as photoheterotrophs.
5) In the usual type of lysogeny the prophage remains free in the cytoplasm as a plasmid.
6) A plate culture technique will reveal the total viable microorganisms of a food sample.
7) Bioremediation is accomplished only with genetically engineered bacteria.
8) Bacterial cells whose cell walls have been completely removed are known as protoplast.
9) Viruses can be seen under a light microscope.
10) The only detectable chemical compound of prions is protein.

II. Write answers in a word   (10×1= 10)

1) Bacterial endospore
2) Prions.
3) Kochs postulates
4) Vermicomposting.
5) Episomes.
6) Bacteroid
7) Commensalism
8) Indicator organism
9) Twort d Herelle phenomena.
10) GMO

III. Write short notes on any ten.   (10×2 = 20)

1) Antagonism
2) Nitrogenase
3) Methanogenesis.
4) Numerical taxonomy.
5) Contributions of Louis Pasteur.
6) Chemotaxis
7) Phyllosphere microflora.
8) Fermentation
9) Mycorrhizae.
10) PGPR.
11) Pesticide degradation.
12) Rhizosphere effect.

IV. Write short assays on any four.   (4×5 = 20)

1) Sulphur cycle.
2) Differentiate between Gram positive and Gram negative bacteria
3) Outline the lysogenic cycle of Bacteriophage.
4) Principles of food preservation.
5) Bacteriological examination of drinking water.
6) Microbial pest control.

V. Write essays on any two.   (2×10 = 20)

1) Biological nitrogen fixation
2) Recombinant DNA techniques in bacteria
3) Nutritional classification of bacteria.