

KERALA AGRICULTURAL UNIVERSITY
B.Sc. (Hons.) Agriculture – 2008 Admission - IIIrd Semester
Final Examination – January-February 2010

Cat. No. : Ssac 2103

Title : Organic Farming and Soil Health (1+1)

Max. marks: 80

Time : 3 hours

I Fill up the blanks

(10x1=10)

1. C/N ratio of raw coir pith is reduced from 112:1 to----- in composted coir pith.
2. A plant tissue metal concentration of greater than -----ppm is indicative of hyper accumulation.
3. The permissible limit for Arsenic in City compost as per Government of India Guidelines is -----ppm.
4. ----- family of earth worms are valuable to agriculture and intimately linked to human welfare..
5. Among the nonedible oilcakes----- has the highest Nitrogen content of 5.2 percent.
6. The changing nature of soil properties as a result of human interference and management refers to-----quality of soil.
7. ----- is a hyper accumulator of Cadmium.
8. ----- are the most efficient among the various microbial groups which degrade hazardous chemicals..
9. ----- is the Father of Biodynamic Agriculture which developed as early as 1924.
10. ----- is a salt tolerant rice variety in Kerala identified for the production of Organic rice.

II Write short notes on any ten of the following.

(10x3=30)

- 1 P solubilising organisms.
- 2 Inoculation methods for VAM.
- 3 Phosphatase.
- 4 Heavy metals in Organic manures..
- 5 Biodegradation of Xenobiotics.
- 6 INM needs and concepts.
- 7 Losses of Nitrogen from soil.
- 8 Organic P compounds in soils.
- 9 Legume –Rhizobium Symbiosis.
- 10 Phyto extraction of pollutants.in soil
- 11 Soil health concept.
- 12 Vermiwash.

III Write short notes on any six of the following.

(6x5=30)

- 1 Describe the phosphorus cycle in soil
- 2 Discuss the role of microbes in organic matter decomposition.
- 3 What are the advantages of biofertilisers over chemical fertilizers. Outline the methods of application of biofertilisers.
- 4 Describe the various methods for preparation of Vermicompost from different types of biowastes. Comment on the advantages of Vermicomposting..
- 5 Describe the various reactions involved in the aerobic and anaerobic process of composting.. How is the efficiency of composting improved? What is enriched compost?..
- 6 Discuss the transformations of sulfur in soils.
- 7 Outline the mechanisms involved in detoxification of pollutants in soil
- 8 Discuss the components of IPNS as a tool in sustainable Agriculture.

IV Write an essay on any one of the following.

(10x1=10)

- 1 Outline the various standards used in Organic Agriculture production and processing. Discuss the programmes and guidelines followed in India for Accreditation, Certification, and Inspection.
- 2 Discuss the various types of biological Nitrogen fixation processes as a source of Nitrogen addition to soil.