



DOON UNIVERSITY, DEHRADUN
Semester Final Examination, Second Semester, 2013
School of Environmental & Natural Resources

M.Sc. Environmental Science
Course: EES-559: Environmental Biochemistry & Biophysics

Time: 2 hours

Maximum marks: 30

Section I

Answer the following in one line statement. (Each question carries one mark)

1. Functional group present in fructose is.
2. What is the difference between D & L glucose?
3. The inter conversion of epimer is known as.
4. Write the name of one reducing & non-reducing disaccharide.
5. Principle of microbial infallibility was proposed by.
6. End product of ortho ring cleavage pathway of benzene is.
7. "Plumbism" is caused by the accumulation which heavy metal.
8. Which heavy metal replace Ca^{+2} from bone structure.
9. Write the name of one fungus used in bioremediation of heavy metal.
10. What is amylose and amylopectin?

Section II

Short answer type (Attempt any five questions, each question carry 2 marks)

11. explain the following:
a) Acid value b) Iodine value c) Saponification value.
12. Discuss the pyranose and furanose structure of glucose.
13. Define homo and hetero polysaccharide by giving one example.
14. Discuss the reducing and non reducing sugars by giving one example with respect to name & structure.
15. Write the various sequential steps for degradation of chloro benzene.
16. Discuss various forms of phytoremediation.

Section III

Long answer type (Question carry 10 marks)

17. What are heavy metals? Write the name of few heavy metals, their sources and disease associated with them. What are the biological methods to reduce the level of heavy metals in environmental.

Or

What are epimers & anomers? Explain by giving suitable examples.

Or

Explain the practical approach of bioremediation for a soil site contaminated with oil (petroleum).



DOON UNIVERSITY, DEHRADUN
Semester Final Examination , Second Semester,2013
School of Environment and Natural Resources

MSc. Environmental Science (Environmental Studies)
EES-513: Aquatic Environment

Time: 2:00 hours

Maximum Marks :30

Note: Attempt Questions from all sections :A,B,C

SECTION : A (Short answerType Questions) Attempt all (Marks : 6 x1 =6)

Q1. What is water pollution ? Define the sources of water pollution.

Q2. Define wetlands and their importance .

Q3. Differentiate them : marine ecology and marine biology.

Q4.Describ briefly the anaerobic treatment of waste water.

Q5. What are the main function of lakes or ponds.

Q6. How mountain ponds are formed?

SECTION : B (Short answerType Questions) Attempt any four (Marks : 4 x3 =12)

Q1. What is eutrophication ? What are the major effects of eutrophication and how we can control it?

Q2.Discuss the physical and chemical characteristics of sea water .

Q3. What is Oceanography ? Discuss the various branches of oceanography.

Q4.Explain them –a) hydrological cycle b) nitrogen cycle

Q5.Discuss the layers of lakes separated by density gradient.

SECTION : C (Long answerType Questions) Attempt any two (Marks : 2 x6=12)

Q1.Give an account of the structure and function of marine ecosystem.

Q2.What is chemical oceanography? Briefly describe the important aspect of chemical oceanography.

Q3. Write note on :

a) Coral reefs

b) Secondary treatment of waste water