

**ENV - 501 [Water Pollution and Waste Water Treatment]**

**Note: Draw the diagram where ever required.**

**Q.1 Answer the following in detail:**

**[14]**

a) Describe the effects of synthetic organic compounds and oxygen demanding wastes on aquatic organisms.

**OR**

a) Discuss the water pollution laws and standards.

b) Describe the characteristics of ground water resources and surface water resources.

**OR**

b) Explain the effects of inorganic chemicals, radioactive substances and oil on aquatic environment.

**Q.2 Answer the following in detail:**

**[14]**

a) Discuss the principle and method used for the determination of Nitrogen and Phosphorus in waste water ?

**OR**

a) Write a note on sampling and preservation of waste water samples.

b) Describe the determination of physical characteristics of waste water.

**OR**

b) Explain the process used for the determination of BOD and COD in effluent.

**Q.3 Answer the following in detail:**

**[14]**

a) Explain (i) Activated sludge system (ii) Biological film system.

**OR**

a) Describe how recovery of materials can be done from process effluents ?

b) Explain the process of: (i) Sedimentation (ii) Flotation.

**OR**

b) Enlist and Discuss two commonly used methods for the removal of suspended solids in advanced waste water treatment.

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**Q.4 Answer the following in detail:**

**[14]**

a) Discuss the processing unit and ETP of dye manufacturing industry.

**OR**

a) Explain the processing unit of pulp and paper industry with its effluent treatment plant.

b) Discuss the processing of milk, its products and effluent treatment plant.

**OR**

b) Explain the manufacturing process and ETP of sugar industry.

**Q.5 Answer the following in short (each carry one mark):**

**[14]**

a) What is Biomagnification ?

b) Why COD test results are higher than BOD tests ?

c) Define: Zone Settling.

d) Differentiate between dyes and pigments.

e) What is Blue Baby Syndrome ?

f) Give the classification of total solids.

g) Which two methods are used for the regeneration of activated carbon ?

h) What is molasses ?

i) Give the full form of: (i) NTA (ii) ABS.

j) Itai-itai disease is caused due to which heavy metal ion ?

k) What is Mordant ? Give its importance.

l) Define: Cumulative poisons.

m) Explain contact stabilization modification process.

n) State the four main types of advanced biological systems.