Code No: RR410804 **RR** **Set No. 2**

IV B.Tech I Semester Examinations,November 2010
ENVIRONMENTAL ENGINEERING
Chemical Engineering

Time: 3 hours **Max Marks: 80**

Answer any FIVE Questions
All Questions carry equal marks

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1. (a) What type of pollutants can be removed in primary and tertiary treatment process?
   (b) Enlist advantages of reverse osmosis. [8+8]
2. (a) Describe various types of bacteria useful in the biological waste treatment system.
   (b) Explain a typical biological waste treatment system of an organic chemical industry. [8+8]
3. What are the ill effects of land disposal of industrial effluent? Explain in detail. [16]
4. Briefly discuss the removal of sulfur from the gases using
   (a) Alkalized alumina process
   (b) Manganese oxide process. [8+8]
5. Explain with suitable examples and theoretical principles the following air pollution devices
   (a) Venturi scrubber
   (b) Bag house
   (c) cyclone separators. [5+5+6]
6. (a) Explain adiabatic lapse rate?
   (b) Explain the atmospheric circulation pattern when dust domes occur?
   (c) Describe briefly the pollutant -wind correlation? [5+5+6]
7. Distinguish between deoxygenation and reoxygenation constants? Under what circumstances there will be variations in reoxygenation constant values? Indicate some of the typical values. [16]
8. (a) What phase of bacterial growth is responsible for the high BOD removal efficiency in the case of activated sludge process.
   (b) Differentiate between organic loading rate and hydraulic loading rate. [8+8]

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Code No: RR410804 **RR** **Set No. 4**

IV B.Tech I Semester Examinations,November 2010
ENVIRONMENTAL ENGINEERING
Chemical Engineering

Time: 3 hours **Max Marks: 80**

Answer any FIVE Questions
All Questions carry equal marks

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1. Explain with suitable examples and theoretical principles the following air pollution devices
   (a) Venturi scrubber
   (b) Bag house
   (c) cyclone separators. [5+5+6]
2. (a) Describe various types of bacteria useful in the biological waste treatment system.
   (b) Explain a typical biological waste treatment system of an organic chemical industry. [8+8]
3. (a) What phase of bacterial growth is responsible for the high BOD removal efficiency in the case of activated sludge process.
   (b) Differentiate between organic loading rate and hydraulic loading rate. [8+8]
4. What are the ill effects of land disposal of industrial effluent? Explain in detail. [16]
5. Distinguish between deoxygenation and reoxygenation constants? Under what circumstances there will be variations in reoxygenation constant values? Indicate some of the typical values. [16]
6. Briefly discuss the removal of sulfur from the gases using
   (a) Alkalized alumina process
   (b) Manganese oxide process. [8+8]
7. (a) What type of pollutants can be removed in primary and tertiary treatment process?
   (b) Enlist advantages of reverse osmosis. [8+8]
8. (a) Explain adiabatic lapse rate?
   (b) Explain the atmospheric circulation pattern when dust domes occur?
   (c) Describe briefly the pollutant -wind correlation? [5+5+6]

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Code No: RR410804 **RR** **Set No. 1**

IV B.Tech I Semester Examinations,November 2010
ENVIRONMENTAL ENGINEERING
Chemical Engineering

Time: 3 hours **Max Marks: 80**

Answer any FIVE Questions
All Questions carry equal marks

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1. Explain with suitable examples and theoretical principles the following air pollution devices
   (a) Venturi scrubber
   (b) Bag house
   (c) cyclone separators. [5+5+6]
2. (a) What phase of bacterial growth is responsible for the high BOD removal efficiency in the case of activated sludge process.
   (b) Differentiate between organic loading rate and hydraulic loading rate. [8+8]
3. (a) Describe various types of bacteria useful in the biological waste treatment system.
   (b) Explain a typical biological waste treatment system of an organic chemical industry. [8+8]
4. Distinguish between deoxygenation and reoxygenation constants? Under what circumstances there will be variations in reoxygenation constant values? Indicate some of the typical values. [16]
5. What are the ill effects of land disposal of industrial effluent? Explain in detail. [16]
6. (a) What type of pollutants can be removed in primary and tertiary treatment process?
   (b) Enlist advantages of reverse osmosis. [8+8]
7. (a) Explain adiabatic lapse rate?
   (b) Explain the atmospheric circulation pattern when dust domes occur?
   (c) Describe briefly the pollutant -wind correlation? [5+5+6]
8. Briefly discuss the removal of sulfur from the gases using
   (a) Alkalized alumina process
   (b) Manganese oxide process. [8+8]

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Code No: RR410804 **RR** **Set No. 3**

IV B.Tech I Semester Examinations,November 2010
ENVIRONMENTAL ENGINEERING
Chemical Engineering

Time: 3 hours **Max Marks: 80**

Answer any FIVE Questions
All Questions carry equal marks

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1. Explain with suitable examples and theoretical principles the following air pollution devices
   (a) Venturi scrubber
   (b) Bag house
   (c) cyclone separators. [5+5+6]
2. Distinguish between deoxygenation and reoxygenation constants? Under what circumstances there will be variations in reoxygenation constant values? Indicate some of the typical values. [16]
3. (a) What type of pollutants can be removed in primary and tertiary treatment process?
   (b) Enlist advantages of reverse osmosis. [8+8]
4. Briefly discuss the removal of sulfur from the gases using
   (a) Alkalized alumina process
   (b) Manganese oxide process. [8+8]
5. (a) Describe various types of bacteria useful in the biological waste treatment system.
   (b) Explain a typical biological waste treatment system of an organic chemical industry. [8+8]
6. What are the ill effects of land disposal of industrial effluent? Explain in detail. [16]
7. (a) Explain adiabatic lapse rate?
   (b) Explain the atmospheric circulation pattern when dust domes occur?
   (c) Describe briefly the pollutant -wind correlation? [5+5+6]
8. (a) What phase of bacterial growth is responsible for the high BOD removal efficiency in the case of activated sludge process.
   (b) Differentiate between organic loading rate and hydraulic loading rate. [8+8]

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