Code No: R05410109 **R05** **Set No. 2**

IV B.Tech I Semester Examinations,November 2010
AIR POLLUTION AND CONTROL
Civil Engineering

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

Answer any FIVE Questions
All Questions carry equal marks

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1. (a) Write short notes on
   i. Lapse rate
   ii. Wind Rose
   iii. Inversions.
   (b) A thermal power plant burns 100 tonnes of coal with 5.5% sulphur content. Calculate minimum stack height required. The particulate concentration in flue gases is 8000 mg/m^3 and the gas flow rate is 20m^3/sec. [6+10]
2. (a) Write the method of NO_x control by operating and design conditions.
   (b) Explain the method of NO_x control by magnesium hydroxide. [8+8]
3. (a) Explain the venturi scrubber with a neat sketch.
   (b) Design a tubular ESP to treat 10,000 m^3/hr of a gaseous stream from a paper mill for an efficiency of 99%. Assume an effective migration velocity of 0.075 m/sec. [8+8]
4. (a) Draw and explain the plume behaviour from stacks of different heights which are seen in industrial area.
   (b) Distinguish between High and Low pressure systems. [9+7]
5. (a) How natural sources are responsible for creation of oxides of carbon.
   (b) Give comparative picture of natural and artificial sources of air pollution.
   (c) Discuss the natural and artificial production of oxides of sulphur. [6+6+4]
6. (a) What are the Ambient Air quality standards by Central Pollution Control Board of India?
   (b) What are the factors to be considered, when a general air pollution survey is undertaken in a city. [8+8]
7. (a) Discuss the role played by vegetation in controlling Air Pollution.
   (b) Explain the effects of water bodies on air pollution dispersion.
   (c) Discuss the air pollutant dispersion in developed urban area with tall buildings and rural area with special reference to wind obstruction and moisture. [5+6+5]
8. (a) How LPG is produced? Explain the uses and formation of air pollutants.

(b) Discuss the role of natural gas its availability and eco-friendly nature in India. [8+8]

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Code No: R05410109 **R05** **Set No. 4**

IV B.Tech I Semester Examinations,November 2010
AIR POLLUTION AND CONTROL
Civil Engineering

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

Answer any FIVE Questions
All Questions carry equal marks

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1. (a) What are the Ambient Air quality standards by Central Pollution Control Board of India?
   (b) What are the factors to be considered, when a general air pollution survey is undertaken in a city. [8+8]
2. (a) Write the method of NO_x control by operating and design conditions.
   (b) Explain the method of NO_x control by magnesium hydroxide. [8+8]
3. (a) How LPG is produced? Explain the uses and formation of air pollutants.
   (b) Discuss the role of natural gas its availability and eco-friendly nature in India. [8+8]
4. (a) Discuss the role played by vegetation in controlling Air Pollution.
   (b) Explain the effects of water bodies on air pollution dispersion.
   (c) Discuss the air pollutant dispersion in developed urban area with tall buildings and rural area with special reference to wind obstruction and moisture. [5+6+5]
5. (a) Write short notes on
      i. Lapse rate
      ii. Wind Rose
      iii. Inversions.
   (b) A thermal power plant burns 100 tonnes of coal with 5.5% sulphur content. Calculate minimum stack height required. The particulate concentration in flue gases is 8000 mg/m^3 and the gas flow rate is 20m^3/sec. [6+10]
6. (a) Draw and explain the plume behaviour from stacks of different heights which are seen in industrial area.
   (b) Distinguish between High and Low pressure systems. [9+7]
7. (a) How natural sources are responsible for creation of oxides of carbon.
   (b) Give comparative picture of natural and artificial sources of air pollution.
   (c) Discuss the natural and artificial production of oxides of sulphur. [6+6+4]
8. (a) Explain the venturi scrubber with a neat sketch.

(b) Design a tubular ESP to treat 10,000 m^3/hr of a gaseous stream from a paper mill for an efficiency of 99%. Assume an effective migration velocity of 0.075 m/sec. [8+8]

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Code No: R05410109 **R05** **Set No. 1**

IV B.Tech I Semester Examinations,November 2010
AIR POLLUTION AND CONTROL
Civil Engineering

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

Answer any FIVE Questions
All Questions carry equal marks

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1. (a) Draw and explain the plume behaviour from stacks of different heights which are seen in industrial area.
   (b) Distinguish between High and Low pressure systems. [9+7]
2. (a) How natural sources are responsible for creation of oxides of carbon.
   (b) Give comparative picture of natural and artificial sources of air pollution.
   (c) Discuss the natural and artificial production of oxides of sulphur. [6+6+4]
3. (a) Discuss the role played by vegetation in controlling Air Pollution.
   (b) Explain the effects of water bodies on air pollution dispersion.
   (c) Discuss the air pollutant dispersion in developed urban area with tall buildings and rural area with special reference to wind obstruction and moisture. [5+6+5]
4. (a) How LPG is produced? Explain the uses and formation of air pollutants.
   (b) Discuss the role of natural gas its availability and eco-friendly nature in India. [8+8]
5. (a) Explain the venturi scrubber with a neat sketch.
   (b) Design a tubular ESP to treat 10,000 m^3/hr of a gaseous stream from a paper mill for an efficiency of 99%. Assume an effective migration velocity of 0.075 m/sec. [8+8]
6. (a) Write the method of NO_x control by operating and design conditions.
   (b) Explain the method of NO_x control by magnesium hydroxide. [8+8]
7. (a) Write short notes on
      i. Lapse rate
      ii. Wind Rose
      iii. Inversions.
   (b) A thermal power plant burns 100 tonnes of coal with 5.5% sulphur content. Calculate minimum stack height required. The particulate concentration in flue gases is 8000 mg/m^3 and the gas flow rate is 20m^3/sec. [6+10]
8. (a) What are the Ambient Air quality standards by Central Pollution Control Board of India?

(b) What are the factors to be considered, when a general air pollution survey is undertaken in a city. [8+8]

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Code No: R05410109 **R05** **Set No. 3**

IV B.Tech I Semester Examinations,November 2010
AIR POLLUTION AND CONTROL
Civil Engineering

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

Answer any FIVE Questions
All Questions carry equal marks

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1. (a) How LPG is produced? Explain the uses and formation of air pollutants.
   (b) Discuss the role of natural gas its availability and eco-friendly nature in India. [8+8]
2. (a) Draw and explain the plume behaviour from stacks of different heights which are seen in industrial area.
   (b) Distinguish between High and Low pressure systems. [9+7]
3. (a) Write short notes on
      i. Lapse rate
      ii. Wind Rose
      iii. Inversions.
   (b) A thermal power plant burns 100 tonnes of coal with 5.5% sulphur content. Calculate minimum stack height required. The particulate concentration in flue gases is 8000 mg/m^3 and the gas flow rate is $20m^3/sec$. [6+10]
4. (a) Discuss the role played by vegetation in controlling Air Pollution.
   (b) Explain the effects of water bodies on air pollution dispersion.
   (c) Discuss the air pollutant dispersion in developed urban area with tall buildings and rural area with special reference to wind obstruction and moisture. [5+6+5]
5. (a) How natural sources are responsible for creation of oxides of carbon.
   (b) Give comparative picture of natural and artificial sources of air pollution.
   (c) Discuss the natural and artificial production of oxides of sulphur. [6+6+4]
6. (a) Write the method of NO_x control by operating and design conditions.
   (b) Explain the method of NO_x control by magnesium hydroxide. [8+8]
7. (a) What are the Ambient Air quality standards by Central Pollution Control Board of India?
   (b) What are the factors to be considered, when a general air pollution survey is undertaken in a city. [8+8]
8. (a) Explain the venturi scrubber with a neat sketch.

(b) Design a tubular ESP to treat 10,000 m^3/hr of a gaseous stream from a paper mill for an efficiency of 99%. Assume an effective migration velocity of 0.075 m/sec. [8+8]

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