

ENV - 504 [Air Pollution and Control Methods]

Note: Draw the diagram where ever required.

Q.1 Answer the following in detail:

[14]

a) Discuss the ambient and emission standards laid down by the government.

OR

a) Write a note on: Properties of Oxides of Nitrogen and Sulphur.

b) Give detailed reactions for the formation of photochemical smog.

OR

b) Explain the effects of Sulphur dioxide and Carbon monoxide on humans.

Q.2 Answer the following in detail:

[14]

a) Explain the method to perform ambient air sampling.

OR

a) Write a note on: Stack monitoring.

b) What are the sampling techniques for flue gas and particulate matter?

OR

b) Write methods for analysis of SO_x, NO_x and Oxidants.

Q.3 Answer the following in detail:

[14]

a) Explain and elaborate the source correction methods.

OR

a) Explain the control methods for gaseous emission.

b) Give details on equipments: (a) Spray Tower (b) Electrostatic Precipitators.

OR

b) Describe the various techniques involved in cleaning of gaseous effluents.

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Q.4 Answer the following in detail:

[14]

- a) Write a note on: Hydrodesulphurization of coal for sulphur extraction from fuel.
- OR
- a) Elaborate on various modifications of operating conditions to control the emissions of NO_x?
 - b) Describe in detail Welman-Lord Process.
- OR
- b) Give detail of Westvaco process for the removal of SO₂.

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

[14]

- a) Define: Mist.
- b) Name the solvents used for the scrubbing of Cl and NO_x.
- c) What is the standard method for measuring CO levels in air sample?
- d) Give the full form for PBzN?
- e) Explain the grab sampling.
- f) What is the difference between chlorosis and necrosis?
- g) Define: Wash-out.
- h) Explain the term: Isokinetic Sampling.
- i) What are thimbles?
- j) Sketch: Cascade Impactor.
- k) Write reaction which leads to DNA mutations in plants.
- l) Which fibers are considered to be appropriate for Bag houses used as fabric filters?
- m) What is COPD?
- n) What are the suitable solvents for scrubbing Ammonia and Mercaptans?