VI Semester Chemical Engineering B Tech End Semester Examinations - May 2022

Program Elective I- Environmental Pollution Control Engineering - CHE4055

Q1A. "Industrial pollution is causing global warming and doom's day is not far off". Justify the statement in terms of ecological impacts on a natural cycle. (4)

Q1B. Explain the salient features of Indian Environmental Legislation. (3)

Q1C. What do you understand by the term ecosystem? With a neat sketch, explain the dynamics of pond as an operating ecosystem. (3)

Q2A. With a neat sketch, explain the sampling train for stack gas sampling. What are the necessary precautions to be taken during gaseous and particulate sampling? (4)

Q2B. Explain the colorimetric techniques for the estimation of SOx and NOx. (4)

Q2C. Differentiate between acute and chronic effects of air pollution. (2)

Q3A. Explain the various meteorological factors influencing the degree of air pollution and deduce the equation and prove that the lapse rate is $10^{o}C$ per kilometer at adiabatic lapse rate condition with all assumptions. (4)

Q3B. What are the objectives of tertiary treatment techniques? With neat sketches, explain any two techniques practiced in a chemical process industry. (4)

Q3C. Define: i) Aerosol ii) Photochemical smog. (2)

Q4A. "Chemical alteration of air pollutants can be done by catalytic treatment and combustion". Justify the statements with suitable illustrations. (4)

Q4B. With sketches, explain plume behavior under stable and unstable lapse rate conditions. (4)

Q4C. Differentiate between epidemiological and toxicological studies of air pollution. (2)

Q5A. With the help of generalized flow diagrams, explain any two processes for control of SO_X. (4)

Q5B. What are the different pollutants that enter the environment by way of discharges from a petroleum refinery? With a neat flow sheet explain the treatment methods employed in a refinery plant. (4)

Q5C. Explain the factors to be considered for the selection of particulate devices. (2)