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# EFFECTS OF METEOROLOGICAL AND TOPOGRAPHICAL CONDITIONS ON DISPERSION OF POLLUTANTS

## O U T L I N E

by

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1. a. Constitution, physical and chemical properties of the atmosphere
   b. Pressure, density, saturation and relative humidity
   c. Variation of pressure and density with height
   d. Variation of temperature with height - Lapse rate
2. a. Dependence of Vertical stability of atmosphere on lapse rate
   b. Thermodynamic significance of changes in lapse rate - Dry adiabatic, moist adiabatic, unstable or superadiabatic, neutral, stable or inversion conditions
3. Dynamics of wind motion
   a. Pressure gradient force
   b. Circulation principle
   c. Horizontal deflecting force due to earth's rotation
   d. Geostrophic wind velocity - Gradient wind velocity
   e. Effect of wind friction
   f. Variation of gradient wind with height

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4. Topographical influences on atmospheric circulations

a. Distribution of continents and oceans

b. Cellular pattern of general circulation

c. Role of migratory low and high pressure fronts

d. Secondary and tertiary circulations - land and sea breezes, lake breezes, influence of valleys and mountains, air flow over undulating country

5. Atmospheric diffusion of matter

a. Behavior of smoke plumes

b. Turbulent flow

c. Measurement of atmospheric turbulance

d. Gaussian or probability distribution of airborne material

e. Diffusion coefficients and parameters

f. Statistical treatment of lateral and vertical distributions of concentrations of pollutants