

# AMMI-22 ENVIRONMENTAL MANAGEMENT IN SURFACE MINES

## UNIT-1 MINE FIRES

- 1.1 Causes and classification of mine fires; Spontaneous combustion mechanism, stages of spontaneous combustion, susceptibility indices, factors affecting spontaneous combustion;
- 1.2 Detection and prevention of spontaneous heating and accidental fires;
- 1.3 Dealing with mine fires direct and indirect methods, fire stoppings;
- 1.4 Re-opening of sealed-off areas; Fires in quarries, Coal stacks and waste dumps.
- 1.5 Mine explosions: Firedamp and coal dust explosions causes and prevention, explosive limits; Stone dust and water barriers;
- 1.6 Explosion in quarries over developed pillars; Investigation after an explosion.

## UNIT-2 INUNDATION

- 2.1 Causes and prevention; Precautions and techniques of approaching old workings;
- 2.2 Dewatering of waterlogged working, safety boring apparatus, pattern of holes;.
- 2.3 Design and construction of water dams.

## UNIT-3 RESCUE AND RECOVERY

- 3.1 Rescue equipment and their uses, classification of rescue apparatus;
- 3.2 Resuscitation; Rescue stations and rescue rooms;
- 3.3 Organization of rescue work; Emergency preparedness and response system.

## UNIT-4 AIRBORNE RESPIRABLE DUST:

- 4.1 Generation, dispersion, measurement and control;
- 4.2 Physiological effects of dust, dust-related diseases.
- 4.3 Illumination: Cap lamps; Layout and organization of lamp rooms;
- 4.4 Standards of illumination; Photometry and illumination survey;
- 4.5 Lighting from main and other sources.

## Reference Books:

1. "Surface Mining" by Bruce A Kennedy
2. "Elements of Mining Technology" by D J Deshmuk