

2.15 30311 OPENCAST MINING

UNIT-1 BASIC CONCEPTS ABOUT SURFACE MINING

Define Surface Mining, different forms of Surface mining – Geo mining situation under which surface Mining adopted, major coal and metal opencasts – Limitations – merits and demerits – Different terminology with sketches.

UNIT-2 DIFFERENT STAGES OF SURFACE MINING

Preparation of ground, de-vegetation – clearance – Formation of OB Benches – Coal benches – Drilling – blasting – loading – transportation – back filling- Box cut, Trench cut, Haul roads – small scale mining-blast less mining Semi mechanized and mechanized open cast mine layouts.

UNIT-3 DRILLING AND BLASTING TECHNIQUES

Classify drill holes – vertical inclined drilling – merits – demerits – various parameters for drill blast holes – drill patterns – Explain used, application estimation of charges for Blasting round of holes – Blasting tools for shot firing procedure-Firing Patterns – deck charging controlled blasting-muffled blasting-cushion blasting secondary blasting methods – dangers and preventive measures.

UNIT-4 MACHINERY EMPLOYED IN OC

Listing different machinery – sketch, functions main parts – place of application of dozer, scraper, road grader, drag lines, shovels – dumper -different drilling machines – sketches, functions parts and application of jackhammer, wagon, down the hole drills –

UNIT-5. MODERN TRENDS IN OPEN CAST MINING

Applicable conditions , method of working - Advantages – disadvantages of- Input crushing technology, surface miner, bucket wheel excavator, applications of GPS in opencast mining

UNIT-6 ENVIRONMENT & ECOLOGY RELATED TO MINING:

Definition of Environment & Ecology – relation between Environmental & ecology-problems of Environmental and Ecology as a result of Mining operations – Remedial measures, concept of EMP- Essential features of EMP.

Reference Books:

1. Surfacing Mining: G.B.Mishra
2. Blasting in Mines: Samir Kumar Das
3. Surfacing Mining: Samir Kumar Das
4. Mine Management: S. Ghatak