

2.10 30299 COAL MINING

UNIT-1 BORD AND PILLAR METHOD – DEVELOPMENT

Bord& pillar system – Applicability's – Merits – Demerits – Different terms – stages of development – depillaring stages – Applicability of panel system – types of panels – factors influencing the size of panel system – general considerations – factors influencing the No. of openings of panel – merits and demerits of panel system – factors governing the selection of development method – factors governed while opening of a district – Panel development with three headings and – Different methods of development systems along dip, along strike, crosscuts, steeply dipping seams, loaders, belt conveyer load haul dumpers, belt conveyers chain conveyors. Road headers – arrangements for ventilation.

UNIT-2 BORD AND PILLAR METHOD– DEPELLARING

Important terms – classification – planning preparation arrangements – sequence of operations – Pillar extraction under weak roof condition – mechanized method of Pillar extraction by LHDS, SDL, scraper chain, conveyor systems – size, shape of pillars, ribs - local fall main fall – air blast, dangers, precautions – method of stowing conditions required for adopting stowing – preparation arrangement for stowing – lay out of panel with stowing – danger and precautions while working below goaved areas – contiguous seams extraction – precautions against fire during and after depillaring.

UNIT-3 LONG WALL ADVANCING METHOD

Long wall – Related Terms –Applicability's, merits, demerits, limitations, classification long wall advancing indicating its applicability's- comparison between Long wall advancing and Long wall retreating- development of gate roads- machinery employed on a mechanized Long wall face-continuous mining method- different factors governing the length of Long wall face- lay outs of mechanized long wall face advancing with caving- layout of mechanized long wall face advancing with stowing.

UNIT-4 LONG WALL RETREATING METHOD

long wall retreating and its applicability's- layout of mechanized long wall face retreating with stowing- layout of mechanized long wall face retreating with caving- lay out of long wall face equipped with shearer- single unit and double unit layouts- cutting methods of the Shearer in longwall mining- methods of sumping in long wall face extraction- method of push- sumping in longwall face extraction.

UNIT-5 THICK SEAM WORKING

Thick seam Working and associated difficulties different methods and applicability's - inclined slicing with caving/stowing - Horizontal slicing with caving / stowing - Blasting gallery method- sub level caving with mechanized longwall - Horizon mining - merits - demerits - Applicability's limitation of demerits.

UNIT-6 MODERN METHODS

applicable condition of a plough, method of working by plough, unidirectional ploughing method, bi-directional ploughing method, overpassing, hydraulic mining, merits and demerits, applicable conditions of underground gasification of coal. Merits, demerits of gasification of coal, method of extraction of gasification and contiguous seam

Reference Books:

1. Elements of Mining: D.J.Deshmuk Vol. 1
2. Wining and working coal: R.T. Deshmuk&D.J.Deshmuk, Vol. 1& 2
3. Longwall Mining: Samir kumar das
4. Modern coal Mining Technology: Samir Kumar Das
5. Principle &Practices of Coal Mining: R.D. Singh
6. Coal Mining practice: Stathum

