B.E. Mining Engineering Seven Semester MN704 - Mine Planning

Due credit will be given to neatness and adequate dimensions. Notes : 1. 2. Assume suitable data wherever necessary. Illustrate your answers wherever necessary with the help of neat sketches. 3. 4. Marks are indicated to the right. What is mine planning ? How many types of mining project can be planned ? What are the 1. 8 a) components of mine planning ? Explain in brief : 8 b) i) Short term planning Mid term planning ii) iii) Long term planning OR What are the different phases of mine planning? Explain in brief. 8 2. a) What is detailed project report? Explain in detail the significance and contents of detailed 8 b) project report. Enlist and discuss at length any one method to determine ultimate pit configuration (UPC) 10 3. a) in case of a surface mine. Estimate the annual productivity for 15/60 Dragline excavator deployed in 50% category b) 6 III + 50% category II with an operation swing of 90°. Assume rest of the conditions. OR 4. State and explain schedule and equipment phasing as it relates to surface mine planning. 8 a) Estimates number of 250 mm diameter drills and 120 tonnes dumpers required of 10 cu.m 8 b) rope shovel deployed to handle 2.20 million cubic m. of over burden. The avg. lead distance for the dumper is 2.0 kms. Assume rest of the conditions. 5. State and define various types of reserves. 4 a) What is panel system of mining ? Why should it be opted and what are tis drawbacks. 4 b) A coal seam having gradient of 1 in 5 occurs at a depth varying from 360-450 m. A 8 c) longwall retreat operation is planned with DERD having cutting height ranging from 2.8-3.6m & depth of 0.85 m. The panel length is 2300 m and the face length is 250 m. Assuming rest of the conditions estimate required manpower and life of the panel. OR

P. Pages: 2

Time : Three Hours

GUG/W/18/1845

Max. Marks: 80

6.	a)	Explain, in brief, relationship between reserve, capacity and life of the mine in case of limited reserves.	6
	b)	Assuming your own conditions, estimate production parameters of a Bord & Piller development district using a 1.2 m ³ SDL. Also state manpower required and estimate the OMS.	10
7.	a)	State & explain how power demand is determined for an u/g coal mine.	4
	b)	Design a coal handling plant (CHP) for an open cast coal project producing 4 MT per annum. Assume rest of the condition.	12
		OR	
8.	a)	Discuss various planning and design considerations for selection of transport system in case of a high capacity iron ore open.	8
	b)	Explain, in details, manpower planning & infrastructure planning.	8
9.	a)	Design a sump and pumping system for a open cast coal mine having parameters as given below : Total quarry area = 2.50 sq.km Max. depth of mine = 100 m Water accumulated in the mine during the day of max. rainfall at 4%. Probability = 170000 cu.m. Assume rest of conditions.	10
	b)	What do you understand by mine closure ? Discuss the procedure to be followed for the same.	6

OR

 10. a) With an objective of achieving the target capacity as early as possible with minimum 16 initial development. Give out a detailed project constructions / implementation schedule for a opencast coal mine producing 2.75 MT having life of 25 years excluding 16 months of construction period.
