

Programme: B. Tech (MiE)
Course: Mine Planning
Course Code: 8PCCMiE311
Enrolment no. _____

Full Marks: 70
Time: 3 Hrs.

Q.No.	Questions	CO	Bloom Taxonomy Category	Marks																			
Section I																							
1	Short Answer type questions.																						
a	Reiterate assumption based study with reference to feasibility study of an Opencast mine.	CO1	Remember	4 x 5 = 20																			
	or																						
b	Illustrate the indicated reserve and inferred reserve.	CO1	Remember																				
	or																						
	Discuss the mine closure and reclamation.	CO2	Understand																				
c	What are the general design parameters and planning data to design a pit?	CO2	Remember																				
	or																						
	Discuss height of bench with reference to different mineral deposits.	CO3	Understand																				
d	or																						
	Describe the optimal location of opening of mine.	CO3	Understand																				
	Elaborate the geological and topographical plan.	CO4	Understand																				
	or																						
	Discuss height of bench with reference to different mineral deposits.	CO4	Understand																				
Section II																							
	Long Answer type questions.																						
2	Recently government has launched the program called VGF to promote coal and Lignite gasification projects. Enumerate the various categories and fund allocation which fall under this program?	CO2	Understand	3 x 10 = 30																			
	or																						
3	Elaborate the main considerations for feasibility report.	CO2	Understand																				
	or																						
	How does the United Nations Framework Classification (UNFC) differentiate between normal economics and exceptional economics?	CO3	Understand																				
4	or																						
	Explain the concept of safe sight distance in mines, focusing on its relationship with haul road geometry.	CO3	Understand																				
	How does the First Mile Connectivity (FMC) program transform coal transportation in India, promoting a cleaner and healthier mining environment?	CO4	Analyze																				
	or																						
	What key factors influence the selection criteria for mining equipment, and how do they impact operational efficiency? Explain in detail.	CO4	Understand																				
Section III																							
	Application based questions																						
5	A concentrator pilot plant processes 1.2 tonnes of copper ore with a Run-of-Mine (ROM) grade of 2% Cu. The metal recovery rate in the plant is 85%, and the copper grade in the final concentrate is 25%. Determine the amount of copper present in the concentrate and calculate the total concentrate produced from 1.2 tonnes of ore in kilograms.	CO1	Create	1 x 20 = 20																			
	or																						
	In a 2D block model, the economic values of each block are given based on the assumption of a 1.5:1 slope angle. Identify the blocks, represented by their respective row and column numbers, that form the ultimate pit boundary.	CO1	Analyze																				
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	1	2	3	4																			
1	-1	-1	1	-1																			
2	-1	1	3	-1																			
3	-1	-1	-1	-1																			

COURSE OUTCOME

CO1 Apply knowledge of mine planning for understanding, formulating and solving mine planning & scheduling problems.

CO2 Describe stripping ratio and opencast working & geometry.

CO3 Acquire knowledge and hands-on competence in applying the concepts in the development of mine planning.

CO4 Analyze feasibility & detailed report of opencast mining.