



Programme: B. Tech (MiE)

Course: Drilling and Blasting Technology

Course Code:8PCCMiE208

Enrolment no. _____

Full Marks: 70

Time: 3 Hrs.

Q.No.	Questions	CO	Bloom Taxonomy Category	Marks
Section I				
1	Short Answer type questions.			
a	List the main objectives of drilling in mineral exploration.	CO1	Remember	4 x 5 = 20
	or			
b	What are the factors which influence the drill ability of the rock?	CO1	Remember	
	or			
c	What is blasting-off-solid ? Mention name of explosive and Cuts are used for blasting- off-solid.	CO2	Understand	
	or			
d	What do you mean by detonator explain briefly with diagram?	CO2	Remember	
	or			
e	Describe the procedure for safe storage of explosives as per statutory guidelines.	CO3	Understand	
	or			
f	State the precautions to be taken during transportation of explosives.	CO3	Understand	
	or			
g	What types of systems are available under the Shock Tube Initiation System?	CO4	Understand	
	or			
h	How are resistance of circuits checked with the Blasting Ohm meter?	CO4	Understand	
	or			
Section II				
	Long Answer type questions.			
2	Explain the feed mechanism in percussive and rotary percussive drill.	CO1	Remember	3 x 10 = 30
	or			
3	Describe the principle and procedure of cable-tool drilling.	CO1	Understand	
	or			
4	Explain how drilling systems differ between surface and underground coal mines.	CO2	Understand	
	or			
5	Compare the risks and safety concerns associated with different underground blasting methods.	CO2	Analyze	
	or			
6	Describe 'NONEL'. What advantages may be offered by the Nonel or Shock tube system?	CO4	Remember	
	or			
7	Discuss the common types of exploders used in mines. Explain them briefly.	CO4	Understand	
	or			
Section III				
	Application based questions			
8	An emulsion explosive of specific gravity 1.25 is used for blasting in an iron ore formation having p-wave velocity of 3000 m/s and specific gravity of 3.20. For explosive impedance to rock impedance ratio of 0.5, the desired velocity of detonation of the explosive in m/s is ?	CO3	Evaluate	1 x 20 = 20
	or			
9	A coal heading 4m wide and 2.5 m high has an advance of 1 m per cycle the amount of explosive used in blasting is 6 kg. Taking specific gravity of coal as 1.5, the powder factor is?	CO3	Evaluate	
	or			

COURSE OUTCOME

CO1 Understand the exploration techniques, drilling operations, casing, coring and data interpretation.

CO2 Analyze the appropriate application of explosive in opencast & underground mines.

CO3 Explain blasting engineering for understanding, formulating and solving blast hole design problems in surface mining.

CO4 Understand the exploration techniques, drilling operations, casing, coring and data interpretation.