

End Semester/Reappear (Semester V) Examination December, 2024

Programme: B.Tech (MiE)

Course: Underground Coal Mining

Course Code: 8PCCMiE303

Enrolment no.

Full Marks: 70

Time: 3 Hrs.

Q.No.	Questions	CO	Bloom Taxonomy Category	Marks
Section I				
1	Short Answer type questions.			
a	Discuss about SDL used in Bord & Pillar mining for removal of coal.	CO1	Understand	4 x 5 = 20
	or			
b	Classify underground coal mining method. Enlist the factors influencing choice of Bord & Pillar coal mining methods.	CO1	Understand	
	or			
c	Draw sketch of diagonal & straight line of extraction in depillaring.	CO2	Understand	
	or			
d	Brief about caving & stowing method of depillaring.	CO2	Understand	
	or			
e	Discuss the dimension of the timber prop at various height of the gallery and draw the diagram of prop supporting the roof.	CO3	Understand	
	or			
f	Coin the term cog and cross bar with sketch.	CO3	Understand	
	or			
g	Describe the advantages of longwall advancing method of coal mining.	CO4	Understand	
	or			
h	Draw a sketch of single unit & double unit longwall face and label all parts.	CO4	Apply	
	or			
Section II				
Long Answer type questions.				
2	Mention the basic methods of coal mining. State in brief the Bord and Pillar as well as Longwall methods of underground coal mining.	CO1	Understand	3 x 10 = 30
	or			
3	Elaborate the three development methods of Bord & pillar method with a neat sketch.	CO1	Apply	
	or			
4	Explain the two pillar extraction methods in Bord and pillar mining system.	CO2	Apply	
	or			
5	Sketch all types of line of extraction methods used during depillaring.	CO2	Apply	
	or			
6	Enumerate the types of support used in underground with proper sketch.	CO3	Apply	
	or			
7	Compare & contrasts between hydraulic prop and friction prop.	CO3	Evaluate	
	or			
Section III				
Application based questions				
8	A DERD cuts coal slices of thickness 1.5m at web depth of 0.25m and length of face is 200 .Calculate the amount of coal removed in an hour or capacity of shearer in an hour if its cutting at a speed of 10 m per min with administrative delay of 10 minute after each full length cut.	CO4	Evaluate	1 x 20 = 20
	or			
9	A shearer of web depth of 0.5 m, height 1.2m ,speed of shearer is 0.4 km/hr at delay of 3 hrs ,face length of 150m is fully extracted .the total panel under extraction is 400 m long. Calculate the no. of days required to cut the whole panel each day =2 shift and 1 shift =8hours.	CO4	Evaluate	
	or			

Course Outcome:

On the completion of the Course, the students will be able to:

CO1: Explain the technical knowledge on development & extraction of coal by board & pillar mining.

CO2: Understand the method & problems of extraction of coal from the underground mines along with stowing.

CO3: Explain the basic knowledge of long wall mining with its applicability, components and machinery required for mining.

CO4: Apply the knowledge of various support system in mines with its advantages & applicability.