JHARKHAND Rai University
RANCHI

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

Programme: B.Tech (MiE)

Course:Design of Open Pit Mine **Full Marks: 70**

Course Code: 8PCCMiEEL403 **Time: 3 Hrs.**

Enrolment no. _____

Q.No.	Questions	CO	Bloom Taxonomy Category	Marks
	Section I			
1	**Short Answer type questions.**			**4 x 5 = 20**
a	Classify the two types of exploration.	CO1	Understand	
	or			
	Write down the salient features of geological report.	CO1	Understand	
b	Enumerate the factors affect the layout of an opencast mine.	CO2	Understand	
	or			
	Enlist the factors affecting choice of mode of entry.	CO2	Understand	
c	Recommend life of underground coal mines on basis of daily production.	CO3	Apply	
	or			
	Brief about Feasibility report.	CO3	Understand	
d	Brief note on Coal Bunker & Coal handling plant.	CO4	Understand	
	or			
	Explain about self-contained, united mine & central mine.	CO4	Understand	
	Section II			
Long Answer type questions.				**3 x 10 = 30**
2	Enumerate the information sought through Geological exploration.	CO1	Apply	
	or			
	Enlist the contents of geological report of exploration.	CO1	Understand	
3	Enlist the main contents of typical feasibility report as prepared in India.	CO3	Understand	
	or			
	Discuss the different subjects of technical factors of feasibility report.	CO3	Remember	
4	Enumerate in details the factors influencing the design of surface layout.	CO4	Understand	
	or			
	Explain the concept of secondary blasting in open cast mines.	CO4	Understand	
	Section III			
	Application based questions			**1 x 20 = 20**
5	If capacity of bucket is 2.5m3 cycle time is 8 min operational efficiency is 0.85 availability is 0.8 swell factor is 0.5 and bucket fill factor is 0.81 and density of coal is 2.1 te/m3.calculate material is to be handled in 8 hours and Also calculate no. of trip if the capacity of dumber is 35 tn.	CO2	Evalaute	
	or			

	A dragline 15m3 deployed for 40 days at 6 hour per shift and 3 shift/day cycle time is 2.5min, Bucket fill factor is 0.8 and efficiency is 75%. Calculate the total amount of OB is to be removed.	CO2	Evalaute	

Course Outcome:

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

CO1 Explain the knowledge of planning process of open pit mine& reserve estimation.

CO2 Analyze the pit design and synthesis of short term planning and to control and influence production scheduling processes.

CO3 Understand the development of infrastructural facilities such as communication, power supply, beneficiation plants and mineral handling plants etc. and able to design various kind of open pit working.

CO4 Apply knowledge on Controlling of opencast mining induced hazards-rock fall, fly rock, blast vibration, noise and mine dusts.