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UNIVERSITY OF PETROLEUM AND ENERGY STUDIES
End-Semester Examination, December 2019

Programme: B.Tech. (Mining Engineering)   Semester: VII
Course: Underground Metal Mining   Time: 03 hrs.
Course Code: MIEG 412   Max. Marks: 100

SECTION A: 20 MARKS

S. No.	Statement of the Question	Marks	CO
Q1.	What are the problems if excavations are driven to the Hangwall area and within the Ore?	4	CO1
Q2.	Write the disadvantages of Open Raising method.	4	CO2
Q3.	Explain briefly Two-compartment raising method.	4	CO2
Q4.	Distinguish between Supported and Caving methods.	4	CO4
Q5.	Differentiate the conditions for Sublevel stoping and Sublevel caving operation.	4	CO4

SECTION B: 40 MARKS

Q6.	Narrate the development principles for a U/G Metal Mine.	10	CO1
Q7.	Providing suitable Underhand stoping method conditions, discuss the unit operations.	10	CO3
Q8.	Describe the different types of Scheduling. What are the areas need to consider?	10	CO6
Q9.	Enumerate the development and operation in Underhand Cut and Fill stoping. OR	10	CO5
a) b)	What is the importance of Draw control operation? Narrate the same with an example. What are the conditions for Square set stoping?	2+4 4	CO5

SECTION-C: : 40 MARKS

Q10. a) b)	Summarize the various steps to be followed for Mine Planning in metal mines. Incorporate the planning with Economic and Risk analysis. Define: Project Phase, Deliverables, Levels in relation to Scheduling.	12+4 4	CO6
Q11. a) b)	Write the problems for Square set stoping. Given conditions - Ore quality: Low-grade, Depth of the ore body: medium, Ore body Dip: 55⁰-70⁰, Ore strength: Weak to Moderately strong. With these conditions, suggest a suitable method, and justify a) Development and b) Unit operations. OR	5 9+6	CO5
c) d)	Write the suitable conditions of Cut and Fill operation. Given conditions - Ore quality: High-grade, Depth of the ore body: deep, Ore body Dip: 70⁰-80⁰, Ore strength: Weak. With these conditions, suggest a suitable method, and justify a) Development and b) Unit operations.	5 9+6	CO5