Name:

Enrolment No:

UPES

UNIVERSITY OF PETROLEUM AND ENERGY STUDIES

End Semester Examination, December- 2019

SECTION A (20 Marks)

Course Name: Mineral Exploration & Mining Geology Programme Name: B. Tech, GSE Course Code: PEGS 2006

Semester: V Time: 03 hrs Max. Marks: 100

	SECTION A (20 Warks)			
S. No.		Marks	CO	
Q 1	Identify suitable scale for a) topographical and b) geological mapping How scale is important for above two stages of exploration.	05	CO1	
Q 2	Differentiate between strategic & tactical survey in Mineral Exploration	05	CO3	
Q 3	Discuss the importance of Nilson's hypothesis in selecting mining method.	05	CO2	
Q 4	Examine the superiority of Fractional Shoveling over Alternate shoveling/ Vice-versa.	05	CO3	
SECTION B (40 Marks)				
Q 5	Analyse the influence/role of interpolation & extrapolation in mineral exploration.	10	CO4	
Q 6	a. Justify the role of pathfinders in geochemical prospecting with suitable exampleb. Differentiate between primary & secondary dispersion haloes	2*5 = 10	CO3	
Q 7	Elluvial placer considered as the Embryonic stage in formation of stream placer. Do you agree/ disagree, support your answer with proper justification/ s.	10	CO1	
Q 8	Given area of entire pit=3600 sq. mtrs, Assume each pit is of rectangular shape and is of equal area. Density of Iron: 1.28t/m³, Density of Mn: 1.12t/m³. Find out the average grade of the area.Fe (height of pit-4mtrs, 1.4% Fe)Fe (height of pit-3.4mtrs, 1.2% Fe)Mn (height of pit-3.4mtrs, 2.7% FeMn (height of pit-4mtrs, 3.2% Fe)	10	CO3	
	OR			
	 What is Cut-off grade? With given set of information, find out the cut -off grade for the Uranium deposit & project feasibility. Deposit contains 1.2% of U. The selling price of U concentrate is 90/- per kg & overall production cost is Rs 1050/- & the overall recovery to be 45%. 	5+5		

	SECTION-C (40 Marks)				
Q 9	Explain assay in context of mining operation. Deduce the formula of assay for vein type of deposit with suitable reason for the same.With the given set of information, find out the assay value for a Lead vein.The vein outcrops on the surface over a width of 50 mtrs and corresponding assay is 15. For the other end, width is 60 mtrs and assay value is 6.Unit for assay is not given but answer should be with proper unit only.	20	CO4		
Q 10	What do you mean by gravity correction? List down the methods for the same. OR What are the controlling factors for resistivity measured in the ground? Based upon resistivity, classify the rock.	20	CO1		