

Name:

Enrolment No:



UNIVERSITY OF PETROLEUM AND ENERGY STUDIES

End Semester Examination, December- 2018

Programme Name: B. Tech, GSE

Semester: V

Course Name: Mineral Exploration & Mining Geology

Time: 03 hrs

Max. Marks: 100

SECTION A (20 Marks)

All Questions are compulsory

S. No.		Marks	CO
Q 1	Discuss the scale intended for topographical & geological mapping at various stages of exploration?	05	CO3
Q 2	Differentiate between strategic & tactical survey	05	CO1
Q 3	What are the Nilson's hypothesis related to choice of mining operation?	05	CO5
Q 4	Differentiate between fractional & alternate shoveling	05	CO4

SECTION B (40 Marks)


First three are compulsory & attempt any 1 from Q-8

Q 5	Analyse the influence/role of interpolation & extrapolation in mineral exploration	10	CO5
Q 6	a. Justify the role of pathfinders in geochemical prospecting with suitable examples b. Differentiate between primary & secondary dispersion haloes	2*5= 10	CO1
Q 7	a. Can placers be of residual origin? Yes/No, elaborate with suitable examples. b. Examine the effect of particle size & shape in formation of placer deposit	2*5= 10	CO2
Q 8	What is cut-off grade? From the given set of information Mn deposit contains 1.2% of Mn. The selling price of Mn concentrate is 60/- per kg & overall production cost is Rs 350/. Assuming the overall recovery to be 80%, calculate the cut-off grade & find out the feasibility of the deposit?	10	CO4
	OR What are the suitable locations for placer accumulation? Elaborate with due justification emphasizing the role of streams as medium & site of deposition	5+5	

SECTION-C (40 Marks)

First question is compulsory, attempt any 1 from Q 10

Q 9	Explain assay in context of mining operation? Deduce the formula of assay for vein type of deposit with suitable reason for choosing the calculation method	20	CO5
Q 10	List down the mandatory factors to be considered while selecting the mining method with their due justification	20	CO6
	OR		
	a. Mineral Supply process governs mining, substantiate		
	b. Analyse the reason behind high ash percentage in Indian Coal	10+10	

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SECTION A (20 Marks)
All Questions are compulsory

S. No.		Marks	CO
Q 1	What are the precursors to obtain the Mining Lease	05	CO3
Q 2	Coal & Petroleum both are produced by the same process, if yes/ No, give suitable justifications	05	CO1
Q 3	Differentiate between combustion & carbonization	05	CO2
Q 4	Differentiate between fractional & alternate shoveling	05	CO4

SECTION B (40 Marks)
First three are compulsory & attempt any 1 from Q-8

Q 5	Explain how mineral supply process governs mining activity?	10	CO6
Q 6	Give reasons behind channel sampling to be considered the most scientific & authentic one?	10	CO4
Q 7	Can placers be of residual origin? Yes/No, elaborate with suitable examples.	10	CO2
Q 8	Establish the relationship between placer deposits classified based upon formation process & eluvial, deluvial and alluvial placer. <p style="text-align: center;">OR</p> Differentiate between washery & steel grade coal?	10	CO2

SECTION-C (40 Marks)

First question is compulsory, attempt any 1 from Q 10

Q 9	Examine the superiority of Prismoidal method of assay calculation over arithmetic mean method	20	CO5
Q 10	Arrange the conditions for formation of placer deposit in proper sequence & analyze the effect of particle movement on formation of placer deposit OR Geochemical anomaly governs the concept of geochemical prospecting, Justify	20	CO1