

Name:	
Enrolment No:	

UNIVERSITY OF PETROLEUM AND ENERGY STUDIES

End Semester Examination, July 2020

Course Name	: Radioactive Mineral Deposits & Valuation	Semester	: VIII
Programme Name	: B.Tech Mining Engineering	Time	: 03 hrs
Course Code	: MIEG 421	Max. Marks:	100

SECTION A

S. No.		Marks	CO
Q 1	i. Discuss the significance of radioactive tracer technique in processing. ii. Co-relate pegmatite with Thorium iii. What is the significance of radiogenic and isotopic history study? iv. Define radioactive ore v. Suggest the most effective way to log natural radioactivity	2*5 =10	CO1
Q 2	i. Serafay method is otherwise known as ----- ii. The standard accepted method for radioactive deposit valuation is ----- iii. In the family of hydrothermal ores, -----are made up partially of radiogenic material. iv. Average thorium-uranium ratios of rocks lie within the range of -----. v. The only appreciably long-lived gaseous member among all the series of radioactive elements is -----	2*5= 10	CO2
Q 3	i. List the volcanic rocks hosting radioactive minerals ii. Identify the rock types containing Thorium, predominantly iii. Discuss the significance of User cost Method iv. Analyse the significance of Radon isotopes in Uranium Exploration. v. Highlight the use of nuclear technique in mining	2*5= 10	CO4

SECTION B

Q 4	Explain the suitable geophysical methods for Uranium Exploration	10	CO2
Q 5	Analyze the role of 'distillation' and 'sedimentation' in formation of radioactive minerals	10	CO3
Q 6	i. Explain the major types of Uranium deposits based upon geological setting & economic significance ii. Discuss the limitations of Net Price Method.	10	CO1
Q 7	i. Discuss the advantages of NPV method to evaluate an asset/investment. ii. Examine the applicability of Appraised Value Method in exploration.	5*2 =10	CO3

Q 8	<p>Elaborate the methods to calculate geological age from the concentrations of radioactive elements and accumulated helium.</p> <p style="text-align: center;">OR</p> <p>Examine the scope of lead method in obtaining absolute ages based upon the same radioactive mechanism.</p>	10	CO2
SECTION C			
Q 9	<p>With various valuation methods, suggest the best one for valuation of radioactive minerals</p> <p style="text-align: center;">OR</p> <p>Summarize the three potential Uranium provinces of India with increasing order of economic importance</p>	20	CO4