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UNIVERSITY OF PETROLEUM AND ENERGY STUDIES

End Semester Examination, May 2018

Program: B.Tech Mining

Subject (Course): Mineral Economics & Exploitation Risk

Course Code : MIEG 251

Semester – IV

Max. Marks: 100

Duration: 3 Hrs

SECTION – A COMPULORY [20 Marks]

		Marks	CO
Q.1	Explain the term mineral economics	[4]	CO1
Q.2	In case of mineral commodity, do we strive for producing higher and higher grade of ore? And if not, why?	[4]	CO1
Q.3	Explain the term Investment decision.	[4]	CO1
Q.4	What are the advantages and disadvantage of considering Pay Back Period as an economic indicator for evaluation of a mining project?	[2×2]	CO6
Q.5	Name the two concept based programs for exploration of mineral deposits?	[4]	CO3

SECTION – B [40 Marks]

Q.6	Distinguish between Mineral Resource and Mineral Reserve.	[10]	CO5
Q.7	Name and describe the mineral concessions that exist in India.	[10]	CO2
Q.8	A mining project considers an initial investment of \$5,000,000 and is expected to generate the following net cash inflows: Year 1: \$3,500,000 Year 2: \$1,030,000 Year 3: \$2,955,000	[10]	CO6

Year 4: \$905,000

Compute net present value of the project if the desired rate of interest is 12%.

- Q.9** What is the period, tenure and fees for which a 'mining lease' is granted? [10] CO2

OR,

Does a person have any preferential right to obtain a mineral concession for the area over which he has surface rights? How does a person renew a mining lease?

SECTION –C
[40 Marks]

- Q.10** (a) Describe the four fold mineral reserve classification in Indian system . [16+4] CO5
(b) Explain the terms 1P, 2P and 3P

- Q.11** (a) Define Internal Rate of Return. [2+18] CO6
(b) A mining company uses the IRR to evaluate investment opportunities and need to make a decision regarding the viability of the project, the details of the cash flows are given below considering the initial investment as \$20,000 and the cost of capital or the discount rate as 10%
Find IRR of a project and determine whether the project is profitable or not.

Year	Cash Flow (\$)
1	12,000
2	6,000
3	5,000
4	10,000
5	7,000

OR,

- (a) Define Pay Back Period. [4+16]
(b) Given the cash flows of the three mining project A, B & C. Using the payback period model which projects will you be accepted with a 3 years cut-off period?

Year	A	B	C
Cost	15,000	10,000	30,000
1	8,000	1,000	10,000
2	8,000	2,000	15,000
3	8,000	5,000	8,000
4	8,000	4,000	2,000
5	8,000	8,000	4,000
6	8,000	6,000	20,000
