

FIRST HALF

(MN 703)

Answer question no.1 and any two from the rest

Full Marks :70

Time 3 Hours

1) a) Why mine investment analysis is an iterative process ?

b) How out of two mining projects with different cash flows one is selected on the basis of profitability.

c) Initial investment in a project is 1 million rupees and the salvage value at the end of the project is 0.1 million rupees . Annual receipt from the project is 0.4 million rupees. Annual disbursement from the project is 0.22 million rupees. Minimum acceptable rate of return is 12 % . Give your comment on the acceptability of the project .

(3+4+6)

2) a) Explain the followings

- i) Mining projects have long gestation period .
- ii) Mining cost structure is unique
- iii) Mineral market has high risk factors
- iv) Discount factor shall cover the base oppourtunity cost.

b) Draw a cash flow diagram to show cash flows at different times during a mine life cycle process.

(2x4+3)

3) a) A shovel costs 35 lakhs and expected rate of return is 15 % . Life of the rope shovel is 15 years, after which the mine will close and the salvage value will be effectively zero. If the shovel works for 10,000 hours per year, what is the hourly cost?

b) The following two machines can perform job equally well .On the basis of the data given below and assuming a rate of return of 10% , which machine will be selected .

	Machine X	Machine Y
Initial investment (Rs 10,000)	130	210
Annual operating	15	12

contd.....2

disbursement (Rs 10,000)

Life	5 yrs	10 yrs
Salvage value (Rs 10,000)	5	0

(5+6)

4 a) What are the objectives of mineral sampling?

b) Explain with the help of neat sketches how following sampling can be done

i) Bulk sampling

ii) Samples from trial pits

iii) Sampling in drives.

iv) Sampling in cross cuts

(3+2x4)

5 a) Why it is essential to carry out pre feasibility study before undertaking feasibility study?

b) What is a feasibility study? What are the essential contents of a feasibility report?

(2+9)

SECOND HALF

Answer Question No 6 and any two from the rest

6 a) What are the basic criteria of National Mineral Policy?

b) Discuss the strategies of mineral development highlighted in the Mineral Policy.

(6+7)

7 a) Express mathematically the demand function of a mineral industry.

b) Explain the changes in mineral demand with respect to price changes considering different period in the life cycle of a consuming industry .

c) What the major determinants of mineral demand?

(3+4+4)

8. Write short notes on the following:

a) Assay plan

b) Isograde plan

c) Bench plan

Contd.....(3)

d) UNFC classification

(2+2+2+5)

9.(a) Explain the fundamental principles of mineral taxation?

(b) What are the different types of mineral taxation?

(2+9)

10 Write a brief note on the mineral distribution in India . Also mention about the minerals which are found in abundance in India .

(11)