

# CBCS SCHEME

Fifth Semester B.E. Degree Examination, Dec.2019/Jan.2020

Mineral Economics

Time: 3 hrs.

Max. Marks: 100

17MN551

Note: Answer any FIVE full questions, choosing ONE full question from each module.

# Module-1

- a. Describe importance of mineral industry for economic growth of a nation. (05 Marks)
  - b. What are the special features of mineral industry over manufacturing industry? Explain.

(10 Marks)

c. Explain demand and supply analysis in relation to mineral industry.

(05 Marks)

### OR

- 2 a. Describe thrust areas of National Mineral Policy 2019. (10 Marks)
  - b. What are the factors that influence the price of minerals? Explain. (10 Marks)

# Module-2

- 3 a. What is the purpose of sampling?
  - b. Describe channel, borehole, grab and bulk sampling with their applications. (12 Marks)
  - c. What are the sources of errors in sampling? Explain. (05 Marks)

#### OR

4 a. Describe different classes of mineral reserve.

(08 Marks)

(03 Marks)

b. Describe polygonal method of ore reserves estimation.

(06 Marks)

c. There are five sample points (1, 2, 3, 4, 5) for an ore body and area of influence of samples are defined by five polygons A, B, C, D and E respectively as shown in figure below fig.Q4(c). Assay values and thickness are given in the Table below:



Figure: Relative position of sample points

Polygon	Area of Polygon	Sample points	Assay value	Thickness
	in m <sup>2</sup>	n <sup>2</sup>	(g/t)	in m
A	500	1	10	1.2
В	600	2	8	3.2
С	550	3	6	2.0
D	525	4	7	2.1
Е	450	5	5	2.5

Determine average assay of the ore body.

(06 Marks)

# Module-3

5 a. What are the factors that influence the mine valuation?

(05 Marks)

b. Derive Hoskold's formula for mine valuation.

(10 Marks)

c. The initial investment for a small scale mining project is Rs 6.0 crore. Annual cash inflow for a life period of 5 years is given below:

Year	Cash Inflow (Rs crore	
1	1.6	
2	2.0	
3	3.0	
4	1.5	
5	1.2	

Determine net present value of the project at an annual discount rate of 10%.

(05 Marks)

#### OR

a. Explain project assessment by Discounted Cash Flow (DCF) method.

(08 Marks)

b. Describe mining fixed costs and operating costs.

(06 Marks)

c. Determine rate of depreciation based on the following information:

Cost of asset: Rs 10000

Salvage value of the asset: Rs 2000

Useful life of the asset: 5 years.

Also determine the Book Value (BV) of the asset at the end of second year. Use written down value method for depreciation calculation. (06 Marks)

## Module-4

a. Describe various sources of finance for an industrial enterprise.

(07 Marks)

Write a brief note on capital structure of a company.

(04 Marks)

c. Explain various types of capitalization with their merits and demerits.

(09 Marks)

#### OR

What is principle of Book Keeping? Explain. 8

(04 Marks)

Describe Profit and Loss Account with standard format.

(08 Marks)

Describe Balance Sheet with standard format.

(08 Marks)

#### Module-5

Describe various elements of cost with examples.

(09 Marks)

Write a short note on overheads.

(05 Marks)

Derive a formula to calculate breakeven point and sales.

(06 Marks)

10 a. What are the need for Cost Accounting?

(04 Marks)

b. Describe various types of budget.

(08 Marks)

c. A limestone mining company installed a cement plant with a capacity of 5,00,000 bags of cement per year at a fixed cost of Rs 5 crore. Sale price and variable cost per bag of cement are Rs 400 and Rs 200 respectively. The company produced and sold 3,00,000 bags of cement in 2018. Comment on the profitability in 2018, using breakeven analysis. (08 Marks)