

2026

Geology (Core)

Paper Code : GL-CE-6314

Paper Name : Ore Geology & Mineral Economics

Time : 2 hours

Full Marks : 50

The figures in the margin indicate full marks for the questions.

1. Choose the correct option : 1×4=4
- a) Which mineral is a classic “indicator” of supergene enrichment in Sulfide deposits ?
- i) Chalcocite
 - ii) Pyrite
 - iii) Galena
 - iv) Sphalerite
- b) The “paragenetic sequence” refers to :
- i) The physical shape of the ore body
 - ii) The order of mineral crystallization
 - iii) The depth of the water table
 - iv) The radioactive decay of isotopes
- c) What is the primary difference between a “Resource” and a “Reserve” ?
- i) Resources are proven; Reserves are inferred
 - ii) Reserves are economically mineable; Resources are potential
 - iii) There is no difference
 - iv) Reserves are only for gold

Contd.

d) The “Cut-off-Grade” is defined as :

- i) The average grade of the entire deposit
- ii) The lowest grade that can be mined at a profit
- iii) The grade of the waste rock
- iv) The maximum concentration of metal in ore

2. Answer the following questions : 2×3=6

- a) What is “SEDEX” ?
- b) What are “Abrasive minerals” ?
- c) What do you mean by “Mineral economics” ?

3. Write notes on **any two** of the followings : 5×2=10

- a) Gemstone - Properties & Indian deposits.
- b) Strategic & critical minerals.
- c) Paragenesis & zoning.
- d) Radioactive minerals & Indian examples.

4. Answer the following questions (**any three**) : 10×3=30

- a) What is an ore deposit ? Mention different processes of ore formation with suitable example of each. Write a detailed note on hydrothermal process. 1+4+5=10
- b) Write on mineralogy, mode of occurrence of iron deposits. Discuss about the major “Iron Belts” located in India. 2+2+6=10
- c) Write your concept about mineral exploration. What are its types ? Describe National Mineral Policy in brief. 2+2+6=10

d) What are the raw materials required for cement industry ?

Discuss about the cement grade limestone deposits of NE India.

Why is gypsum added to cement ?

2+7+1=10

- e) Write your concept on control of ore localization ? Mention different controls of ore localizations and discuss in brief about them with appropriate examples.

2+8=10

- f) Write short notes on (*any two*) :

5+5=10

i) Placer deposits.

ii) Mineral development & conservation.

iii) Refractory minerals.

