5. Study the structural formula of Olivine [$(Mg, Fe)_2 SiO_4$] and comment on the internal structure of the mineral.
6. Write a short nnote on the Feldspar Group of minerals.

PART – II (Marks: 20)

Answer ***any four*** questions from the following. 4×5=20

All questions carry equal marks.

1. What do you mean by 'Lithosphere'? In which part of Ocean basin would you encounter the thickest oceanic lithosphere? Answer with reasons.
2. What type of rocks constitutes the earth's mantle? How are they mineralogically and compositionally different from rocks of continental crust?
3. What is an Igneous rock? Name one extrusive Igneous rock of felsic composition and identify its plutonic counterpart.
4. What is a metamorphic rock? Define 'Mica schist'. From which type of precursor can this be originated?
5. What is a sedimentary rock? Discuss the difference between a 'conglomerate' and a 'sandstone'.
6. Write short note on ***any two*** of the following :
   i) Mid-oceanic Ridge and its rock types
   ii) Intrusive igneous rocks and their structures
   iii) Crust-mantle boundary within oceanic tectonic plate.

B. Sc. Geological Sciences Examination, 2023

(2nd Year, 2nd Semester)

Rocks and Minerals

Paper – GE (Theory) – 4

Time : Two hours Full Marks : 40

(Use a separate Answer script for each Part)

PART – I (Marks: 20)

Answer ***any four*** questions from the following. 4×5=20

All questions carry equal marks.

1. What is Moh's scale of hardness? Why is it called relative hardness? How is the hardness of any mineral measured in the laboratory? Name a mineral that has more than one hardness when measured along two different directions of the crystal.
2. How do density and specific gravity of matter differ from each other? What is the difference between paramagnetic, diamagnetic, and ferromagnetic minerals? Give examples.
3. "Higher the charge of the cation, lower the coordination number". Accept or reject the statement with reasons. Name a cation that can occupy both tetrahedral and octahedral sites.
4. What is the difference between Single-Chain Inosilicate and Double-Chain Inosilicate? Give examples.