Quadrant II – Transcript and Related Materials

Programme	**: Bachelor of Science (Third Year)**
Subject	**: Geology**
Paper Code	**: GEC-105**
Paper Title	**: Mineralogy**
Unit	**: I**
Module Name	**: Description of Mineral Group – Amphibole 2**
Module No	**: 18**
Name of the Presenter	**: Meghana S Devli, PhD**

Glossary of terms/words:

1. Prismatic	**:** relating to or having the form of a prism or prisms
2. Pleochroism	**:** is an optical phenomenon in which a substance has different colors when observed at different angles, especially with polarized light.
3. Parallel extinction	**:** Extinction is said to be parallel if the long direction of the crystal or a prominent cleavage plane is oriented N-S or E-W when the mineral goes extinct.
4. Oblique extinction	**:** In optical mineralogy, the extinction of a mineral (i.e. it becomes dark) in crossed polars with its cleavage traces or crystal boundaries positioned at an oblique angle to the E–W and N–S planes of vibration of the polarizer and analyser
5. 2V (Optic Axial Angle)	**:** The acute angle between the optic axes is called the 2V angle. Just like in uniaxial minerals, if one is looking down one of the optic axes, light traveling along the optic axis will be vibrating in the β direction, and thus the mineral would be extinct for all rotation positions
6. Anthophyllite	**:**a mineral, magnesium-iron silicate, $(Mg,Fe)_7(Si_8O_{22})(OH)_2$, occurring in schists in lamellar or fibrous clove-brown crystals
7. Gedrite	**:** is the magnesium (Mg) rich end member of a solid solution series, with divalent magnesium cations readily

replaced with ferrous iron (Fe), leading to the iron rich end member 'ferro gedrite',

8. Cummingtonite : a mineral $(Fe, Mg)_7Si_8O_{22}(OH)_2$ consisting of an iron magnesium amphibole isomorphous with anthophyllite.

9. Grunerite : is a mineral of the amphibole group of minerals with formula $Fe_7Si_8O_{22}(OH)_2$. It is the iron end member of the grunerite-cummingtonite series. It forms as fibrous, columnar or massive aggregates of crystals. The crystals are monoclinic prismatic.

10. Tremolite : a white to grey amphibole mineral which occurs widely in igneous rocks and is characteristic of metamorphosed dolomitic limestones.

11. Actinolite : A greenish amphibole mineral, $Ca_2(Mg,Fe)_5Si_8O_{22}(OH)_2$, that occurs in several forms, including a fibrous form that is a variety of asbestos.

12. Hornblende : a dark brown, black, or green mineral consisting of a silicate of calcium, magnesium, and iron, occurring in many igneous and metamorphic rocks.

13. Phenocrysts : a large or conspicuous crystal in a porphyritic rock, distinct from the groundmass

14. Glaucophane : A blue to greyish-blue or bluish-black monoclinic mineral of the amphibole group. It occurs as fibrous prisms in schists (especially blueschist) formed by the regional metamorphism of sodium-rich rocks.

15. Blueschist Facies : is determined by the particular temperature and pressure conditions required to metamorphose basalt to form blueschist. Felsic rocks and pelitic sediments which are subjected to blueschist facies conditions will form different mineral assemblages than metamorphosed basalt.

16. Riebeckite : an amphibolic mineral, silicate of sodium and iron, occurring usually in feldspathoid rocks.

17. Arfevdsonite : is a sodium amphibole mineral with composition: $[Na][Na_2][(Fe^{2+})_4Fe^{3+}][(OH)_2|Si_8O_{22}]$. It crystallizes in the monoclinic prismatic crystal system and typically occurs as greenish black to bluish grey fibrous to radiating or stellate prisms.

Possible misconceptions/clarification

Case Studies and Additional Examples/Illustrations