



1- Which family of silicates do the following minerals belong to? (4 pts)

- Garnets:
- Beryl:
- Epidote:
- Pyroxenes and amphiboles:

2- Mention two minerals are non-metal

- a) b)

3- Isomorphism, Isotypism or Polymorphism?

.....: Two mineral species are isotypes when they have distinct chemical compositions but similar structural formulas.

4- To which family of silicates do the minerals whose formulas are the following belong?

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|----------|--|-------|
| Epidote | $\text{Ca}_2(\text{Fe,Al})\text{Al}_2[(\text{O OH})_2\text{Si}_2\text{O}_7]$ | |
| Beryl | $\text{Al}_2\text{Be}[\text{Si}_6\text{O}_{18}]$ | |
| Diopside | $\text{CaMg}(\text{Si}_2\text{O}_6)$ | |
| Quartz | (SiO_2) | |

5- Cyclosilicates (Silicates with tetrahedrons associated in rings)

The rings have 3, 4 or 6 tetrahedrons, hence the structural formulas:

6tetrahedrons.....,3tetrahedrons,4tetrahedrons.....

6- Tecto-silicates are subdivided into 5 groups or families:

- silica group
- feldspar group
- feldspathoid group
- zeolite group
- scapolite group

7- Olivines are nesosilicates of which there is an iron variety and a magnesium variety.

- Write the formula of Forsterite, knowing that it is a magnesium olivine:
 - Write the formula of Fayalite, knowing that it is an iron olivine:
 - Can an olivine contain both iron and magnesium?, (Write the formula)
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8- Which is not a silicate mineral:

- a) Olivine b) Arragonite c)Amphibole d) Sodalite

9- Fools gold refers to:

- a) Bornite b) Sphalerite c) Galena d) Pyrite



10- Diamond belong to which crystalline system:

- a) Quadratic b) Cubic c) Rhombohedral d) Hexagonal

11- Which is not an ore of iron?

- a) Magnetite b) Cassiterite c) Siderite d) Sphalerite

12- Refers to the mass per volume:

- a) Hardness b) Gravity c) Density d) Viscosity

13- When two mineral species are have distinct chemical compositions but similar structural formulas:

- a) Idiomorphism b) Isotypism c) pseudmorphism d) All answers are wrong

14- The way a mineral transmits light is called:

- a) Opaque b) Reflection c) Refraction d) Tranparency

15- Which of the following minerals belong to the oxide group?

- a) Scheelite (CaWO_4) b) Hematite (Fe_2O_3) c) Barite (BaSO_4) d) Nitratine NaNO_3

16- To which family of silicates do the following mineral groups belong?

Pyroxenes Group }
 Amphiboles Group }

Chlorite group: clino-chlorine }
 Clay group: Kaolin, Montmorillonite }

17- Mineral groups?

Sylvite	KCl
Fluorite	CaF_2
Ilmenite	FeTiO_3
Siderite	FeCO_3

18- What are the properties most commonly used in identification of a mineral are: