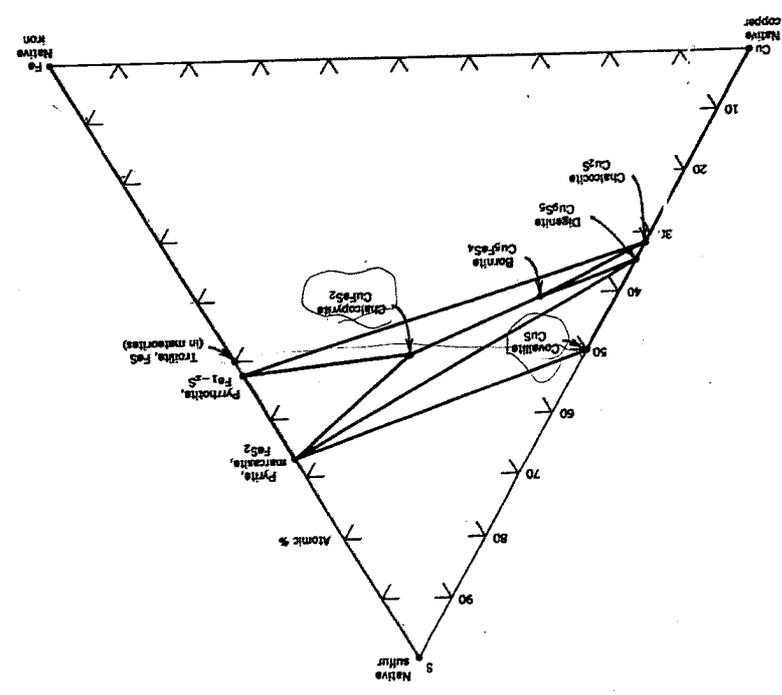


MOLECULAR WEIGHTS	
SiO2	60.08
TiO2	79.88
Al2O3	101.96
Cr2O3	151.99
V2O3	149.88
Fe2O3	159.69
FeO	71.85
MnO	70.94
MgO	40.3
CaO	56.08
ZnO	81.38
NiO	74.693
COO	74.933



12. If you mix 20 wt-% ideal grossular and 80 wt-% ideal diopside, what will the analysis of the mixture look like? [10]

13. A poster at a beach just north of Durban claims that the black grains in the sand are ilmenite. One grain gives the following analysis. Your comments (and correct mineral formula) please. [10]

MgO	14.17
Al2O3	0.61
TiO2	55.81
Cr2O3	0.96
MnO	0.27
FeO	28.17
Total	99.99

14. This gem garnet has a purplish-red colour and I had it analyzed. This appears to be a top quality analysis, but I am not sure that all the crystal chemical requirements for a garnet are fulfilled. Please evaluate. Please tell me also what the 2 most prominent end members in this analysis are. [20]

MgO	17.51
Al2O3	24.02
SiO2	40.99
CaO	0.9
TiO2	0.02
Cr2O3	0
MnO	0.39
FeO	17.09
Total	100.95