

**USGEOT02 - Geology Paper-II (Mineralogy and Elementary Mineral Optics)**

P. Pages : 2

Time : Three Hours



**GUG/W/23/11553**

Max. Marks : 50

- Notes : 1. All questions are compulsory and carry equal marks.  
2. Draw Neat and Labelled diagram wherever necessary.

**1.** What are minerals? Describe with examples various forms of minerals. **10**

**OR**

Describe the following:

a) Isomorphism and Polymorphism **5**

b) Hardness of mineral **5**

**2.** Give a brief account of the quartz group with reference to physical properties, chemical compositions and their geological occurrence. **10**

**OR**

Describe the following:

a) Piezoelectric and Pyroelectric minerals **5**

b) Nesosilicates and Sorosilicates **5**

**3.** Give a brief account of olivine group with reference to physical properties, chemical compositions and their geological occurrence. **10**

**OR**

Describe the following

a) Aluminous silicate group. **5**

b) Explain chemical and physical properties of pyroxene group. **5**

**4.** Explain in detail parts and functioning of petrological microscope. **10**

**OR**

Describe the following

a) Becke line method. **5**

b) Abbe refractometer. **5**

5. Write on the following in not more than two sentences (Solve **any ten**)

10

- a) Specific Gravity
- b) Any two types of lustre
- c) Define specific gravity
- d) Radioactivity
- e) Name any two minerals from feldspar group
- f) Give any two properties of mica
- g) Any two physical properties of actinolite
- h) Fracture in hornblende
- i) Name any two minerals of amphibole group
- j) What is PPL
- k) Critical angle
- l) Nicol prism

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