

## **GUIDE LINES FOR PRACTICAL EVALUATION (PE) IN GEOLOGY**

The practical evaluation at class XI& XII is meant for evaluating the ability of the learner to identify various mineral and rock specimens. Through this evaluation, the learner is expected to examine and identify:

- 1) Mineral specimens with the help of their salient physical properties.
- 2) Rock specimens based on their texture and mineralogy.
- 3) Metallic and non-metallic mineral specimens with the help of their chief diagnostic properties.

### **I. Content areas for PE at class XII**

#### **Unit: 1 (Mineralogy-Rock forming minerals)**

##### **Megascopic identification of the following mineral specimens**

- |                     |                   |
|---------------------|-------------------|
| 1. Talc             | 2. Biotite (Mica) |
| 3. Muscovite (Mica) | 4. Calcite        |
| 5. Fluorite         | 6. Apatite        |
| 7. Feldspar         | 8. Quartz         |
| 9. Garnet           | 10. Corundum      |

#### **Unit: 2 (Petrology)**

##### **Megascopic identification of the following rock specimens**

###### **A. Igneous rocks**

- |            |              |
|------------|--------------|
| 1. Granite | 2. Pegmatite |
| 3. Basalt  | 4. Dolerite  |
| 5. Gabbro  | 6. Basalt    |

###### **B. Sedimentary rocks**

- |              |                 |
|--------------|-----------------|
| 1. Sandstone | 2. Conglomerate |
| 3. Shale     | 4. Limestone    |

### **C. Metamorphic rocks**

- |           |                |
|-----------|----------------|
| 1. Slate  | 2. Schist      |
| 3. Gneiss | 4. Charnockite |

### **Unit: 3 (Economic Geology)**

#### **A. Megascopic identification of the following ore/metallic minerals**

- |                |              |
|----------------|--------------|
| 1. Hematite    | 2. Magnetite |
| 3. Chalcoprite | 4. Bauxite   |
| 5. Pyrolusite  | 6. Galena    |

#### **B. Megascopic identification of the following non-metallic/ industrial minerals**

- |              |           |
|--------------|-----------|
| 1. Asbestos  | 2. Gypsum |
| 3. Graphite  | 4. Baryte |
| 5. Magnesite | 6. Clay   |

### **II. Practical evaluation (PE)-guide lines**

1. The practical evaluation is conducted at the end of the first year course as an internal examination.
2. Practical evaluation at the end of the second year of the course shall also be conducted by an external examiner.
3. The learner shall keep with him/her a single entry practical log book containing his/her observations and the teacher's comments.
4. The evaluation done by the teacher is recorded in practical log book.
4. The first year log book can be used for recording practical works done in the second year also.
5. The practical log book will be evaluated by the external examiner during the PE conducted at the end of the second year

6. No separate viva voce shall be conducted for PE. It may be conducted based on the items given for practical work while the examination is going on.

### **III. Scheme of work for PE**

Maximum scores for PE are 40 (both first year & second year)

Total time is 3 hours

The distribution pattern of mineral specimens, intended to be given for practical evaluation is provided herewith.

i). Four specimens from Unit I (mineralogy),

The specimens of rock forming minerals specified in the content area shall be provided.

Scores assigned to each item is 4.

Total = 16 scores (4x4 = 16 scores).

ii). Three specimens from Unit II (Petrology)

The three rock specimens, each from igneous, sedimentary and metamorphic groups of rocks shall be provided from Petrology.

Score assigned to each item is 4.

Total = 12 scores from this unit (4x3 = 12 scores).

iii). Two specimens from Unit III (Economic Geology) shall be given.

The two specimens, each from metallic (ore) and non-metallic (industrial) minerals can be given from this unit.

Score assigned to each item is 4.

Total = 8 scores from the unit 3 (4x2 = 8 scores).

iv). A maximum of 4 scores for the single entry practical log book and viva voce.

### **IV. Scoring key for PE**

#### **Identification of mineral specimens**

Analysis of physical properties and identification of given mineral specimens: 4 scores each

The scores are distributed as follows:

- i). Identification of chief diagnostic properties of a specimen- 2 scores each
- ii). Ability to diagnose all other physical properties-1 score each
- iii). Identification and nomenclature-1 score each

**Identification of rock specimens**

- i). Identification of textures/ structures of a rock specimen- 1 scores each
- ii). Description of mineralogy- 2 scores each
- iii). Identification and nomenclature- 1 score each shall be given.