

**MRT 152-3 Mineralogy and Petrology I**

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This paper consists of three (03) parts

Part A: MCQ, Part B: Structured, Part C: Essay

Total number of questions: Part A: Twenty (20), Part B: Ten (10), Part C: Three (03)

Answer all questions

Time Allocated: Three (03) hours

Mark Allocation: 100 (Part A: 20, Part B: 20, Part C: 60)

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**Part C - (01 hour and 30 minutes)**

1. a. Write an account on chemical classification of minerals. Briefly describe four (04) groups.  
b. Describe the common features of following mineral pairs and explain how they can be distinguished in hand specimen using their physical properties.
  - i. Quartz and Corundum
  - ii. Hematite and Magnetite
  - iii. Calcite and Gypsum

(20 mark)
  
2. a. Describe the characteristics of the unit cells of the six crystal systems.  
b. Using an example explain the roto-inversion symmetry found in mineral crystals.  
c. With the aid of a diagram explain how Miller Index of a crystal face is derived.

(20 mark)
  
3. a. How do intrusive rocks form? How do they differ from extrusive rocks?  
b. Briefly describe a classification scheme of igneous.  
c. Write a short note on foliated textures in metamorphic rocks.

(20 mark)

