

PARUL UNIVERSITY
FACULTY OF APPLIED SCIENCE
M.Sc., Winter 2018-19 Examination

Semester: 1
Subject Code: 11211101
Subject Name: Mineralogy and Crystallography

Date: 01/12/2018
Time: 10:30am to 01:00pm
Total Marks: 60

Instructions:

1. All questions are compulsory.
2. Figures to the right indicate full marks.
3. Make suitable assumptions wherever necessary.
4. Start new question on new page.

- Q.1. A) Essay type/ Brief note (4x2) (Each of 04 marks) (08)**
 (a) Explain Cyclosilicates.
 (b) Explain Nesosilicates.
- Q.1. B) Answer the following questions (Any two)**
 (a) Short note/ Brief note (2x2)/ Schematically label the figures (2x2) (Each of 02 marks) (04)
 1. What is the role of polarization in optical mineralogy?
 2. What is index of refraction?
 (b) Short note on Crystal symmetry. (04)
 (c) Short note on Crystallographic axes. (04)
- Q.2. A) Answer the following questions.**
 (a) Short note/ Brief note (2x2). (Each of 02 marks) (04)
 1. Explain isotropic crystals.
 2. Give two mineral examples of pyroxene group.
 (b) Short note on Polarization. (04)
- Q.2. B) Answer the following questions (Any two)**
 (a) Multiple choice questions. (Each of 01 marks) (03)
 1. Gyroidal class belongs to:
 a) Isometric system b) Hexagonal system c) Triclinic system d) Orthorhombic system
 2. Identify nonmetal element from the options given below
 a) Sulfur b) Copper c) Gold d) Silver
 3. When the wave motion is confined to vibrations in a single plane, the light is said to be _____.
 a) Plane polarized b) Non polarized c) Polarized d) None of the above
 (b) Short note on pyroxene group. (03)
 (c) Short note on serpentine group. (03)
- Q.3. A) Essay type/ Brief note (4x2) (Each of 04 marks) (08)**
 (a) Brief note on Triclinic system.
 (b) Brief note on Monoclinic system.
- Q.3. B) Answer the following questions (Any two)**
 (a) Short note/ Brief note (2x2)/ Schematically label the figures (2x2) (Each of 02 marks) (04)
 1. Which crystal system is having maximum number of classes?
 2. What is the crystallography of olivine group minerals?
 (b) Short note on chemical composition of earth's crust. (04)
 (c) Short note on measurement of RI. (04)
- Q.4. A) Answer the following questions.**
 (a) Fill in the blanks. (Each of 02 marks) (04)
 1. ____ include those natural compounds in which oxygen is combined with one or more metals
 2. Most of the sulfide minerals are _____ with distinctive colors.
 (b) Short note on 4/m 2/m 2/m class with stereogram axes of symmetry and forms developed. (04)
- Q.4. B) Answer the following questions (Any two)**
 (a) Short note. (Each of 01 marks) (03)
 1. What are crystallographic axes of Isometric system?
 2. What are forms developed in 432 class?
 3. What are crystallographic axes of Hexagonal system?
 (b) Short note on Orthorhombic system. (03)
 (c) Short note on 2/m 2/m 2/m class with stereogram axes of symmetry and forms developed. (03)