2022
M.Sc.
First Semester
CORE – 01
GEOLOGY
Course Code: MGLC 1.11
(Mineralogy, Crystallography & Analytical Techniques)

Total Mark: 70 *Pass Mark: 28*
Time: 3 hours

Answer five *questions, taking* one *from each unit.*

UNIT–I

1. Explain the systematic mineralogy of olivine group of minerals. 14

2. Explain the following: 7×2=14
   (a) Pseudomorphism
   (b) Omission solid solution

UNIT–II

3. Explain the systematic mineralogy of pyroxene group of minerals. 14

4. Write notes on the following: 7×2=14
   (a) Kaolinite and melilite
   (b) Chlorite and hornblende

UNIT–III

5. Discuss the systematic mineralogy of sulfides and sulfosalts. 14

6. Give the mineralogy of the following: 7×2=14
   (a) Native elements
   (b) Hydroxides

UNIT–IV

7. Discuss the origin of twinning in the crystal. Explain with neat sketch the different types of twin laws of triclinic and isometric system. 4+10=14

8. Write notes on the following: 7×2=14
   (a) Uniaxial minerals
   (b) Biaxial interference figure

UNIT–V

9. Write the principles of inductively coupled plasma mass spectroscopy and write down its geological applications. 14

10. Explain the basic principles of X-ray fluorescence spectrometry in the analysis of geological samples. 14
