

M.Sc. Sem.-1 Examination

403

Geology

January-2024

Time : 2-30 Hours]

[Max. Marks : 70

Instructions: (I) Draw neat diagrams whenever necessary.
(II) Write proper answer number.

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- Q-1 Write an illustrative note on variations in chemical composition in minerals. (14)
- OR
- Q-1 (a) Olivine family. (07)
(b) Pauling's rules. (07)
- Q-2 Name the feldspar minerals and describe the sheet silicates minerals. (14)
- OR
- Q-2 (a) Gemology and its application. (07)
(b) Silica minerals. (07)
- Q-3 Write an explanatory note on dispersion with examples. (14)
- OR
- Q-3 (a) Sign determination of biaxial minerals. (07)
(b) Optic signature. (07)
- Q-4 Explain the methods of determination of birefringence with examples. (14)
- OR
- Q-4 (a) Optic axial angle. (07)
(b) Pleochroic scheme of uniaxial minerals. (07)
- Q-5 Attempt any seven questions out of twelve. (14)
- (i) Name the four minerals of pyroxene group.
 - (ii) Define solid solution and exsolution.
 - (iii) Draw a sketch of ring silicate structure.
 - (iv) Draw a sketch showing conoscopic condition of microscope.
 - (v) Classify the minerals as to optic axis with one example each.
 - (vi) Name the optical accessories and its application.
 - (vii) Define indicatrix and draw its figure.
 - (viii) Name the types of interference figures in a biaxial mineral.
 - (ix) How will you differentiate uniaxial and biaxial minerals?
 - (x) Give pleochroic scheme of andalusite.
 - (xi) Describe principles of U stage.
 - (xii) Why does montmorillonite group of clay minerals swell when they come in contact with water?

