

**B.Sc. Semester-5 Examination****CC 302****Geology****March-2024****Time : 2-30 Hours]****[Max. Marks : 70**

- Instructions:** (i) Draw neat diagrams whenever necessary.  
(ii) Write proper answer number.

- Q-1** Explain crystallisation of bi-component magma with suitable examples. (14)
- OR**
- Q-1** (a) Types, origin and composition of magma. (07)  
(b) Pyrogenetic minerals. (07)
- Q-2** State the bases of classification of igneous rocks and explain classification of igneous rocks based on chemistry. (14)
- OR**
- Q-2** (a) Hatch scheme of classification. (07)  
(b) Classification of saturated and undersaturated gabbroic rocks. (07)
- Q-3** Explain dislocation and plutonic metamorphism with examples from India. (14)
- OR**
- Q-3** (a) Dynamothermal metamorphism of argillaceous rocks. (07)  
(b) Thermal metamorphism of carbonate rocks with examples from Gujarat. (07)
- Q-4** Explain mineral parageneses of metamorphic rocks with reference to ACF and AFM diagram. (14)
- OR**
- Q-4** (a) Divariant metamorphic reactions. (07)  
(b) Grades and facies of metamorphic rocks. (07)
- Q-5** **Attempt any seven questions out of twelve.** (14)
- (i) Define eutectic condition with example.
  - (ii) Draw a sketch of Tamman curve.
  - (iii) Name four textures of igneous rocks based on fabric.
  - (iv) Give the variants of undersaturated basalts.
  - (v) Give the mineralogy of leucitophyre and leucitite.
  - (vi) Define and draw a sketch of rapakivi texture.
  - (vii) Give examples of anomalies produced due to stress effect in metamorphism.
  - (viii) Define anti-stress minerals with examples.
  - (ix) Give grade and type of metamorphism when sericite schist is formed.
  - (x) Define uralitisation and saussuritisation.
  - (xi) Explain deformation and phase diagram.
  - (xii) Give similarity and distinction of quartzite, marble and amphibolite and hornfels.