

GUJARAT TECHNOLOGICAL UNIVERSITY**BE SEM-III Remedial Examination May 2011****Subject code: 132203****Date: 20/05/2011****Subject Name: Geology-1****Time: 10.30 am – 01.00 pm****Total Marks: 70****Instructions:**

1. Attempt all questions.
2. Make suitable assumptions wherever necessary.
3. Figures to the right indicate full marks.

- Q.1** (a) Define geology. Enlist the various branches of geology and add a note on its importance in mining engineering. **07**
- (b) What is mineral? Describe in detail hardness and cleavage as the physical properties of minerals with typical examples. **07**
- Q.2** (a) Describe in detail the physical properties, chemical composition and mining significance of following minerals: (i) Quartz (ii) Fluorite (iii) Bauxite **07**
- (b) Define the terms weathering, erosion and denudation. Describe in detail the chemical weathering of rocks. **07**
- OR**
- (b) Write notes on river meandering and sand dunes. **07**
- Q.3** (a) Explain dip and strike, normal and reverse faults with neat sketches. **07**
- (b) What is fold? Explain various parts of a typical fold and importance of folds in mining engineering works. **07**
- OR**
- Q.3** (a) What are faults? Give the classification of faults based on apparent movement. How the faults are recognized in the field? **07**
- (b) Describe the principles of stratigraphy. Describe the lithology, distribution, economic and mining importance of Dharwar system. **07**
- Q.4** (a) Explain internal structure of the Earth and theory of plate tectonics. **07**
- (b) Discuss the role of remote sensing in mineral exploration. **07**
- OR**
- Q.4** (a) What is map? Explain geological map and procedure for drawing the cross section along the profile. **07**
- (b) Describe core drilling methods. Add note on adits and shafts. **07**
- Q.5** (a) What is aerial photography? Explain types of aerial photographs. **07**
- (b) Write detail notes on types of unconformities. **07**
- OR**
- Q.5** (a) Write notes on: (i) Streak and color of minerals (ii) Electromagnetic energy. **07**
- (b) Explain (i) Geological classification of soils. (ii) The Karst topography as chemical work of groundwater. **07**
