

**GUJARAT TECHNOLOGICAL UNIVERSITY****BE SEM-III Examination-Dec.-2011****Subject code: 132203****Date: 13/12/2011****Subject Name: Geology-I****Time: 2.30 pm -5.00 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) What is mineral? Describe in detail colour and cleavage as the physical properties of minerals with typical examples. **07**
- (b) Define geology. Enlist the various branches of geology and add a note on its importance in mining engineering. **07**

- Q.2** (a) Describe in detail the physical properties, chemical composition and mining significance of following minerals: (i)Orthoclase (ii)Galena(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. Discuss the significance of faults in mining engineering. **07**
- (b) Describe the principles of stratigraphy. Describe the lithology, distribution, economic and mining importance of Vindhyan subgroup. **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 are mineral families? Explain properties of feldspar mineral family. **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) How are strike and dip of the formation measured on geological map. **07**

**OR**

- Q.5** (a) Write notes on: (i) Hardness and fracture of minerals (ii)Explain symmetrical and asymmetrical folds.. **07**
- (b) Describe the geological work of ground water with suitable examples. **07**

-----