

GUJARAT TECHNOLOGICAL UNIVERSITY
B. E. - SEMESTER – III • EXAMINATION – WINTER 2012

Subject code: 132202**Date: 10-01-2013****Subject Name: Mine Development****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) Explain various attachment of headgear with sketch. **07**
(b) Write Short notes on : various types of shaft lining. **07**
- Q.2** (a) Describe tunnel driving using jumbos . Explain material transport and support system used during tunneling. **07**
(b) Explain shaft pillars . How optimum location of shaft is decided? **07**
- OR**
- (b) Write short not on : Walling scaffold & Rider **07**
- Q.3** (a) Explain special methods of shaft sinking : (1) Piling System & Caisson methods. **07**
(b) Explain mucking operation during shaft sinking. **07**
- OR**
- Q.3** (a) What do you mean by trackless mucking ? **07**
(b) Explain ventilation & drainage pattern in drifting. **07**
- Q.4** (a) Explain : (1) Adit , (2) Decline **07**
(b) shaft of 5.8 m diameter is to be sunk to a seam 180 m depth .Describe briefly cycle of operation including ventilation & mucking. **07**
- OR**
- Q.4** (a) Explain : Raise climbers use for vertical development. **07**
Q.4 (b) Explain with sketch : Shaft centering arrangement. **07**
- Q.5** (a) Describe long hole raising method of vertical development. **07**
(b) Explain tunneling by using road header machine. **07**
- OR**
- Q.5** (a) What is the meaning of following terms. Explain it : [1] Cross cut , [2] Temporary lining of shaft . **07**
(b) Explain merits and demerits of incline system v/s a shaft system. **07**
