

**GUJARAT TECHNOLOGICAL UNIVERSITY****BE- IV<sup>th</sup> SEMESTER-EXAMINATION – MAY/JUNE- 2012****Subject code: 142201****Date: 23/05/2012****Subject Name: Mining Machinery -I****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 different types of Aerial ropeways used in mine for over burden or ore transportations. **07**

**(b)** Explain various types of locomotives used in mines. **07**

**Q.2 (a)** Explain rope splicing procedure with sketch. **07**

**(b)** Explain pipe line and distributions of compressed air used in u/g mines. **07**

**OR**

**(b)** What are the various safety attachments used in haulage track and mine car **07**

**Q.3 (a)** Explain advantages of endless rope haulage. **07**

**(b)** What do you mean by rope capping ? Explain any one rope capels. **07**

**OR**

**Q.3 (a)** Explain advantages of direct rope haulage. **07**

**(b)** What are various parameter affecting selection of wire rope? Briefly describe. **07**

**Q.4 (a)** Why conveyor haulage is better then Aerial rope ways system ? Give your own reasons. **07**

**(b)** Design Haulage track & mine car [ tub ] used in under ground mine to transport 1 lacs tons of coal. What are various maintenance schedule of Haulage track ? **07**

**OR**

**Q.4 (a)** Design belt conveyor system used in open cast mine to transport 7.5 lacs tons of lignite per year to a distance of 2 kilometer form the face of loading . What are various maintenance procedure of conveyor system ? **07**

**(b)** What is the importance of rope tensioning arrangement used in Aerial rope way system ? **07**

**Q.5 (a)** Which type wire ropes used for [1]winding rope ,[2] Direct & endless haulage ropes & [3] Guide rope? Why ? **07**

**(b)** Write short notes : [1] Locked coil types wire rope [2]Comparison of compressed air with other form of power. **07**

**OR**

**Q.5 (a)** Write short notes : [1] shuttle car [2]Law profile dumpers **07**

**(b)** Describe pit top & pit bottom layout with sketch. **07**

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