

GUJARAT TECHNOLOGICAL UNIVERSITY**B.E. Sem-Vth Examination December 2010****Subject code: 152201****Subject Name: Mining Machinery – II****Date: 13 /12 /2010****Time: 03.00 pm - 05.30 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: purpose of headgear and headgear design with its sketch. **07**
(b) What do you mean by friction winding? What are its merit and demerits? **07**
- Q.2** (a) List of safety devices in winders. **07**
(b) Describe any one method of mechanical braking in winding. **07**
- OR**
- (b) Explain: Lily Controller. **07**
- Q.3** (a) Find out the net static torque at the beginning of wind **07**
when each cage weighs is 10 tones carries 6 tubs taking 0.5 tones. Each tub holds 1 tons of coal. Depth of the shaft is 900 meter. Take Rope weights 8 tones, Diameter of the drum 2.5 m.
(b) Describe the king Detaching Safety hook with its sketch when over winding is occur. **07**
- OR**
- Q.3** (a) Calculate the net static torque of winding with following specification **07**
Coal raised per wind = 5 tones
Depth of the shaft = 500m
Rope weights = 5 kg/m
Balance rope weights = 2 kg/meter
Diameter of Drum = 1.5 meter
(b) Explain Suspension Gear with sketch and brief discussion of its parts. **07**
- Q.4** (a) Give the pit top layout with a shunk back arrangement. **07**
(b) What are the different signaling arrangements is done in mines? **07**
- OR**
- Q.4** (a) Give a suitable layout of a run round arrangement at pit top for a coal mine dealing with production. **07**
(b) Write short note on a coal cutting machines with its types. **07**
- Q.5** (a) Give the list of mechanical loader used in underground mining and describe about gathering arm loader. **07**
(b) Point out the applicability merit and demerits of continuous miner with its methodology in brief. **07**
- OR**
- Q.5** (a) Explain side discharge loader with its applicability in mine. **07**
(b) Describe the coal plough with sketch. **07**
