GUJARAT TECHNOLOGICAL UNIVERSITY

BE - SEMESTER-VI • EXAMINATION - WINTER • 2014

Date: 01-12-2014

Subject Code: 162203

Subject Name: Sub Surface Environment

		me: 02:30 pm - 05:00 pm Total Marks: 70 tructions:	
		 Attempt all questions. Make suitable assumptions wherever necessary. Figures to the right indicate full marks. 	
Q.1	(a) (b)	What is the composition of mine atmosphere? Explain mine pollution. How natural ventilation is done in mine? Explain the thermodynamics of ventilation.	07 07
Q.2	(a) (b)	What are the types of Mine fans? Explain their construction and working. What is relative humidity? How is relative humidity of air determined? OR	07 07
	(b)	Explain booster and auxiliary fans with diagram.	07
Q.3	(a) (b)	Explain the principle of air flow in mine. Why pressure ventilation survey necessary? What are air locks? Suggest suitable airlock design. OR	07 07
Q.3	(a) (b)	What is firedamp? Explain firedamp occurrence in different mines. What is fan ventilation? How Air Screw fan and Centrifugal fan works?	07 07
Q.4	(a) (b)	Explain Kata thermometer for the assessment of comfort condition in mine. What are the properties of gases found in mine and how they are detected? OR	07 07
Q.4	(a) (b)	What is the role of mine shaft design in ventilation of mine. Explain the accumulation of gas in mine as hazard.	07 07
Q.5		Write note on any two:- 1. Ventilation district 2. Hot Seal. 3. Resistance in airways. 4. Blackdamps and stinkdamps.	14
