Seat No.:	Enrolment No.
S C LL I 1011	

GUJARAT TECHNOLOGICAL UNIVERSITY

BE – SEMESTER V • EXAMINATION – WINTER - 2012 Subject code: 152205 Date: 22-01-2013 **Subject Name: Underground Coal Mining** Time: 02:30 pm to 05:00 pm **Total Marks: 70 Instructions:** 1. Attempt all questions. 2. Make suitable assumptions wherever necessary. 3. Figures to the right indicate full marks. 07 **Q.1** (a) Classify various under ground coal mining methods. (b) What are the various factors affecting the selection of u/g coal mining **07** methods. **Q.2** (a) Describe retreating methods of Long wall system. **07** Explain drift theory and in-situ theory of origin of Coal. 07 **(b)** Write notes on : Pneumatic stowing & mechanical stowing 07 Q.3 (a) Write notes on: [1] Hydraulic profile and H: L ratio in hydraulic stowing 07 07 **(b)** What are the advantages of stowing methods? 0.3 (a) Explain with sketch: Barrier and preparatory stopping in Board and Pillar 07 method of mining. (b) What are the special arrangements in development in steep seams by bord 07 and pillar methods? Q.4 (a) Explain meaning of following terms: (1) incubation period, (2) Cyclic 07 long wall and non cyclic long wall methods. (b) Describe depillaring system for a coal seam 4.5 m thick in board & pillar 07 methods. Also explain sequence of pillars extracted with sketch. OR (a) What are the precaution against fire during and after depillaring operation 07 **Q.4 Q.4** (b) What are the factors considered for selection of optimum length of a long 07 wall face? **Q.5** (a) Describe behavior of roof during depillaring with caving. 07 (b) Explain general arrangement of a sand stowing plant with surface and 07 underground face arrangement. **Q.5** (a) Write notes on: (1) Room & pillar method 07 (b) Why roof bolting system widely adopted in present mining system? 07 Explain it.
